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Original Contributions.

REMINISCENCES AND THINGS.

By J. S. CASSIDY, D.D.S., COVINGTON, KY. READ BEFORE THE KENTUCKY STATE DENTAL ASSOCIATION, MAY 14 16, 1901.

Some twenty years ago, more or less, an epidemic of dental pulp preservation spread throughout the profession. Extraordinary efforts were made in that laudable direction, and wonderful stories were told of the uniformly successful results following certain lines of treatment. Formulae for the purpose were presented in and out of meeting and in print, and nearly all of them were highly recommended by eminent practitioners.

Each preparation intended for capping was so perfectly constituted that when applied as a covering to the pulp that unsophisticated organ was fooled into the belief that its brief experience of exposure to the awful heat and cold of the outer world was only a horrible dream. Whether the pulp realized later on that its former sufferings were not a dream was decided—too often in the affirmative, alas—by the other dentist.

Preposterous as it seems, according to our present knowledge of physiology, the suggestion was made in good faith that we could supply nutriment to the pulp from the outside, and, for instance, lacto-phosphate of lime was for quite a while the most plausible and favorite preparation for this purpose. Once at a state meeting the writer heard a prominent member enthusiastically contend that it was good practice to cut into the dentin for the proper food, and permit the fine powder thus formed by the sharp bur to fall upon the hungry pulp like "the gentle dew from heaven upon the thirsty earth."

Then came the idea of amputating the superfluous exposed tissue, so the "flap operation" was described, also the subsequent union by first intention of the healthy excised edges.

About this period our fellow member, Dr. Wm. Van Antwerp, on

leaving his office one summer afternoon for his home in the country, bought a porterhouse steak for supper. After going a little way he noticed the brown paper wrapped around it was softening through the warmth of his hands and the influence of the meat juice. He happened to be passing near a cluster of paw paw bushes, so reenforced the weakening paper with a few leaves. Perhaps the doctor unconsciously remembered the custom immemorial among the Indians of placing for a time the beef from any tough old buffalo between fresh leaves of the paw paw to make it more tender. At any rate he was not alarmed, as others might have been, when he discovered on reaching home that his steak presented in spots a peculiar semi-digested appearance where it had become in contact with the leaves. On the contrary, the incident made him happy in the thought that perhaps the paw paw might supply us with a remedy that would supersede the existing methods of doing away with undesirable portions of the dental pulp. In a paper on "Papain" read before the International Dental Congress at Paris last year, Dr. Harlan gave Kentucky full credit for introducing the practical idea of pulp digestion, but so far as the writer knows, Dr. Harlan is entitled to the credit of first using papain for the purpose suggested.

Papain is obtained from the common paw paw (*carica papaya*). The best variety probably comes from the milky juice of the unripe fruit. It is a white powder, soluble in water and glycerol; the latter preserves it from degeneration and does not interfere with its digestive powers. Papain converts fibrin into peptone, whether the solvent solution be acid or alkaline. It is non-poisonous, neither caustic nor astringent, and on account of its digestive virtues has been used in medicine as an aid to the normal functions of the stomach, and for the removal of false membranous growths, such as form in diphtheria, also to remove warts, tubercles, etc. It is inactive on healthy tissue. A more or less impure ferment, papayatin or papoid, changes starch into maltose and albuminoids into peptones. Take it all and all, the power of the paw paw to supply a good digester to either the boy in the woods or the patient under the doctor's care can not be questioned.

At the present time no strenuous effort is made to retain the dental pulp or any portion of it when exposed by disease, and it is recognized that mummifying those remains which cannot easily be disposed of with instruments makes the future value of the tooth an

uncertain quantity. In this accepted emergency in practice Dr. Harlan has presented us with papain, the best pulp digester thus far discovered. He suggests bathing the part with one-half per cent borax solution, and then applying a paste made up as follows:

Papain, - - - - - gr. j.

Glycerol,

Hydrochloric acid (1-300) - aa. gtt. j. m.

Let this paste stay sealed in place for from two to ten days, the time required for complete solution depending upon the quantity of dead pulp to be dissolved. Being a non-irritant, the preparation causes no uneasiness. The writer judges from limited personal knowledge that Dr. Harlan is not extravagant in his claims for papain, but whether the empty tortuous canals can be successfully filled is a matter to be decided by each individual operator.

Among the few really useful remedies of recent introduction to dental materia medica the drug known as orthoform is deserving of some consideration, as it has been used long enough to fully test its virtues. Chemically, it is the methyl-ester of para-amido-meta-oxybenzoic acid, and therefore belongs to the benzene class of organic compounds. It is a white crystalline powder of weak acid reaction, freely soluble in alcohol, sparingly and very slowly soluble in water, without odor, and produces no immediate effect on the sense of taste. At the end of two or three minutes a slightly bitter after-taste is noticed, followed by a gradually increasing numbness of the part. It is not a poison and may be used *ad libitum*. It possesses some antiseptic properties, is an excellent analgesic rather than anesthetic, and is applied to relieve pain in burns and scalds, ulcers of the tongue and other parts, after extraction of teeth, in dry socket, in pyorrhea, before and after operation, etc. For these purposes it may be employed in powder form or made into a solution or an ointment.

Just a few words in conclusion. We all gratefully recognize the fact that Dr. Miller has successfully proven for all time that lactic acid formed in the mouth is the solvent in true dental caries. To this most essential factor in the disease we have regarded as important adjuncts poorly constructed enamel, low density, uncleanness, etc. By some thinkers, however, defective enamel and density have been eliminated from the discussion, and a few go so far as to hold that the manifest filth accompanying excessive dental caries is a

consequence and not a cause. They point accordingly for proof of their opinion to the apparent immunity from decay of the teeth in the mouths of innumerable adults which never receive attention from the brush or any other antiseptic treatment. The question then naturally arises, do the vital forces govern chemical changes in the mouth in a way analogous to the government of the other parts of the body, when involved in the process of destructive metabolism? One item alone as a text may suffice—nervous tissues are alkaline in reaction, but become acid through overwork and sometimes even from gentle exercise, the acidity being due to lactic acid and some uric acid. It seems therefore that ferments are not absent even in the gray matter, and are induced to become active in their several lines of work through fatigue, for instance, or other forms of so-called neuroses.

With these brief and rather crude statements in view, and in order to keep in touch with the evolution of at least a segment in the sphere of professional thought, it appears to be worth while to ask in humility—Is the inception and continuance, and their opposite phenomena, immunity from and spontaneous arrest of, dental caries due more to systemic influences rather than to purely local conditions?

A SUBSPECIALTY IN DENTISTRY.

By C. M. WRIGHT, D.D.S., CINCINNATI. READ BEFORE THE CINCINNATI ODONTOLOGICAL SOCIETY, JUNE 31, 1902.

In 1864 I read an essay before the Cincinnati Dental Society—the mother of this society—on "Specialties in Dental Practice," which was my first paper. At that time I could conceive of but two departments, the mechanical and the operative, and I offered arguments in favor of a division with all the optimistic assurance of youth.

About twenty-five years ago, in Basel, Switzerland, I mapped out a scheme for the practice of a new specialty of dentistry for a woman of education who applied to me for advice. She wished to earn a living, yet did not desire or feel able to enter into the full work of an accomplished dentist. I then planned for her the kind of work which shall form the subject of my talk this evening. She did not follow my suggestions and fit herself for the specialty, because it was not feasible at that time and place, but this circumstance did not affect my opinion of the excellence of the idea, and

I believe the time has arrived when we should make it possible for and encourage just such applicants to enlist in this field of useful service.

Ten years ago I explained the same scheme to another woman who sought advice about entering the profession of dentistry. This one was convinced by my picturesque and enthusiastic advocacy of the "Specialty within a Specialty," but as there appeared no opportunity for acquiring the education necessary for the practice of the vocation, she was compelled to abandon the plan. Soon after that she was enrolled as a student in a school of stenography, and now spends ten hours a day agitating a typewriter in a down-town business office.

The recent papers by Dr. D. D. Smith of Philadelphia on the prophylactic value of the expert polishing of the human teeth, beginning with the children, and having regular and frequent appointments and systematic attention in this one direction, and continuing it possibly throughout life, has appealed to me so forcibly that I have felt that suggestions on "A Subspecialty in Dentistry," devoted to the polishing of teeth and the massage of gums, might be apropos. I beg leave to offer the following outline of a scheme, the details of which seem easy of arrangement.

1. The practitioners of this separate and yet most important branch of dentistry are to be women of education and refinement, who are seeking a field for work of an honorable and useful kind and among people of culture.
2. The dental colleges are to offer opportunities for this partial and separate training. The course to consist of lectures on the Anatomy of the Teeth and Gums, Special Pathology and Physiology, and a special clinical training in prophylactic therapeutics.
3. Upon the completion of this special course, which shall require one session, or one year of study and practice under instruction in the college infirmary, and after presenting satisfactory evidence of proficiency in the polishing of teeth and caring for the mouth, the college shall grant a certificate of competence to the graduate of this course.
4. With this training and the dental college certificate, these women may be employed by dentists for this special work, or may practice the same at parlors of their own, or at the homes of patients, the dentists using their influence and recommending the new specialists, just as physicians and surgeons recommend and insist upon the services of the trained nurse or the masseuse.

I think every one of you will agree that there could be no more valuable service in oral hygiene than that which such a class of specialists would afford.

Dentists who treat pulps, fill teeth, make bridges, crowns and plates, treat inflammation and Riggs' disease, extract teeth and roots, and construct and care for regulating appliances, do not devote the proper attention to the careful polishing of all the surfaces of the thirty-two teeth, nor to the frequent massaging of the tissues which Drs. Smith, Talbot, and others advocate so strenuously as essential to the health of the human mouth. We as a profession have neglected these operations. We scale off the calcareous and other accretions at long intervals, often imperfectly, or partially and hurriedly, and with wheels and brushes on our electric engines whisk off the most conspicuous stains, leaving the teeth only comparatively presentable. We seldom perform the operation with satisfaction even to ourselves. Probably, in the light of the revelations made by Dr. Smith, the majority of us have never once thoroughly polished all the exposed surfaces of the teeth of our patients.

I think all would be glad to have this work done fortnightly or monthly by experts, for every patient who comes to us for so-called dental operations—viz., for crowns, fillings, bridges, etc.—and not only before coming, but at regular intervals afterwards *especially in conjunction with our surgical treatment of Riggs' disease.*

I have claimed that teeth are a luxury, but *clean* teeth—and by this I mean teeth each one of which has been polished on every surface by a skilled operator until it presents a finish only rivalled by some fine jewel—should be a badge of refinement that would place the child, the man, and the woman on a certain social plane. Polished teeth in this age of luxury, when the bath, the manicure, and the chiropodist are considered necessities, should form a subtle reason for an aristocracy of cleanliness which is next to godliness. Our ideas of the term *clean* have changed during the last twenty years. Then a man was clean who took a Saturday-night bath, a monthly shampoo, and shaved himself three times a week. Now we talk about "surgical cleanliness," and know about infections on toothpicks, and even upon smooth-looking enamel.

As we advance in the adoption of luxuries we get more particulars about daintiness, and this seems to be true in all things except-

ing with the teeth. I believe that it is largely due to us that this surgical cleanliness has not taken a more prominent place in the estimation of the general public. Our devotion to the diversified and exhausting mechanical operations which we are hourly called upon to perform, and on account of which we have gained reputation as a skilled and useful profession, has diverted our thoughts from what we call a minor operation.

Our energies, measuring as much per foot-pound as that of any other profession—law, medicine, or theology—have been fully expended on the many more brilliant operations in our surgical repertory, and we have neglected this one, which we all admit is as important as any in its relation to health. We have given ourselves over to restoration and been content to advise tooth-brushes, sanitol or vegetol to our patients, leaving the responsibility of real prophylaxis with them. We may not be able to change our modes and habits of practice, but we can, by this method, and with the hearty cooperation of the dental colleges in affording the educational equipment necessary for the cultivation of this field of special practice, revolutionize dentistry—place it upon a still higher plane. The operation suggested is more directly in the line of preventive medicine, with all that this implies, than any other in the scope of prophylaxis that I can think of, such as boiled drinking-water, ventilation, sanitary plumbing, physical exercise, diet, and bathing. Imagine a room full of children, as they are now in any school, public or private, in regard to surgically clean mouths, and the same children after a thorough polishing of all their teeth. Here is an opportunity for missionary work. Enthusiasm on the part of operator and patient could easily be stimulated, and health and morals be vastly improved. Ten years of such effort on the part of our profession would do more for the human family than all the tooth-pastes and powders ever invented, or all the tracts for the people ever published, for the responsibility would be removed from the patient and placed where it belongs—on the practitioner of this art of oral hygiene, these subspecialists.

We have set the men on pedestals who have been able to cut out a carious spot on a tooth, extend and form a cavity so that a clean surface of gold may take the place of enamel and protect one part of a single tooth from a single disease; shall we not commend and honor the specialist who patiently and regularly operates for the

prevention of this and other diseases by intelligent and systematic care of the entire mouth? This is a fundamental idea of dentistry, agreed to by all yet neglected.

With our present exact knowledge of etiology, and our increasing familiarity with the wide-reaching effects of oral sepsis, are we not ready for the establishment and hearty endorsement of trained specialists who will devote their entire time to this one branch of prevention? From personal observation among refined people in America and Europe, I believe success would follow the efforts of the colleges and the profession in this direction, for we shall be supplying an awakening demand for just such service.

REPORT OF SURGICAL CASES.

BY DR. G. LENOX CURTIS, NEW YORK CITY. READ BEFORE THE FIRST DISTRICT DENTAL SOCIETY.

I have not come to you with a paper, but with clinical reports of cases. I shall tell you the history of each case, how I operated, and show the results. In the larger number I will be able not only to show you the photographs and casts before the operation, but also the patients themselves, who have kindly consented to come here this evening. When invited to demonstrate some cases before you it was suggested that I should not go closely into the details of my work, so I confine my remarks to conditions and results, with only sufficient detail to enable you to better comprehend the situation. In looking over my cases I have endeavored to select those that would particularly interest the dental profession, yet at the same time would give you a fair sample of the scope of my work.

The first case I will show you is, as you see, one of lupus vulgaris, and is situated on the forehead near the left temple. The age of the patient is sixty years. Despite the fact that she had been almost constantly under treatment for the past twelve years, the disease had increased until, when I first saw her five weeks ago, it covered an area of about two and one-half inches. The treatment in this case consisted of high-frequency electricity (one million volts), lactate of silver, and permanganate of potassium. The disease was quickly stamped out and circulation in the part reestablished, so that now the wound is closed with the exception of the small granulating spot, about the size of a three-cent piece. Another week's treatment will, I think, be sufficient to complete the cure.

(Dr. Curtis reported July 20 that this case was completely healed ten days after demonstration, and that there was no sign of the disease returning.—E.D.)

This method of applying electricity is new, and as I am soon to demonstrate its value before the medical profession, in the treatment of chronic diseases, I will not expatiate on it at this time more than to say that it is a single-pole current, and has but one-sixth ampere-age and a million voltage. In the treatment of cancer, neuralgia, etc., I have employed it with gratifying results. The pain, odor, and suppuration of cancer is dissipated in a few days, and the growth gradually diminishes, so that in from two to three months treatment the disease has been arrested, and healthy granulations have been established. This treatment I have applied in several inoperable cases, where the disease was situated in the mouth, and of such an extent that the patient was unable to swallow food. The action of electricity upon the growth was such as to reduce it sixty per cent under two months treatment, and enable the patient to take solid food.

I am now treating a case of carcinoma of the face, which shows every evidence of success. During the six weeks treatment almost every particle of diseased tissue was apparently destroyed, and the wound was filling in with healthy granulations. I here present a cast of the jaws, showing the results following an operation for removal of epithelioma from the upper left maxilla. There has been no return of the disease in these cases. I next show a patient upon whom I operated for similar trouble six months ago, and I will demonstrate the adjustment of one of these dentures. The results were eminently satisfactory. In all these cases I did not cut through the face in resecting the jaws, and because of this I attained better results, and there is no deformity.

Here is a cast of the face of a child aged five years who, when having a lower deciduous molar extracted, had the jaw broken. Her dentist and family physician treated it for some months, but did not recognize the fact that the jaw was broken until necrosis was fully established, as well as a sequestrum, extending from the cuspid tooth to the ramus, and protruding through the gums. On examination I found the periosteum was rapidly reproducing the bone, and that the patient was able to partially open the mouth, also that the malocclusion was but slight, notwithstanding the fact

that a splint had not been employed. I removed the sequestrum and encouraged the granulating tissue until the new portion of the jaw was of sufficient strength for mastication. The child had lost the second deciduous molar, and the germs of the first and second molars. The swelling of the face, as noticed in the cast, had not completely subsided when last seen.

I will present a young woman who met with a similar trouble at the hands of her dentist some five years ago, in having the first permanent right molar extracted. The patient stated that her dentist had treated her for a year and a half without putting on splints or telling her the jaw had been broken; that all this time the face had been badly swollen, that she had been unable to take solid food, also that this had prevented her from attending school. Upon examination I found the patient extremely anemic, suffering from blood-poisoning, hypertrophy of the right side of the face (due to cellular growth). The sequestrum was protruding from the gum, and all the teeth back of the first bicuspid were absent, with a history of their having been loose and removed.

There was an opening through the face just back of the angle of the jaw which was large enough to allow of passing my fingers through into the mouth. The bone back of the bicuspid (first) to the neck of the jaw, including the caroid process, was completely necrosed and exfoliating. This was removed, rendering the surrounding parts healthy. The wound was kept packed with gauze until new bone was formed of sufficient strength to support the remainder of the jaw, and to restore the contour of the face. The case responded quickly to treatment and the patient made a good recovery in two months, and is now, as you see, in excellent health. With the exception of the loss of the teeth, the enlargement of the face is the only remaining prominent feature.

There are two conditions in these cases to which I should like to call your attention. Had an interdental splint been adjusted at the time of the fracture, the bones would have probably speedily united. The long-continued treatment, the slowness with which the jaw exfoliated and the new bone was produced, made the change in the occlusion of the teeth at a minimum. The second condition—the hypertrophy of the cheek due to long-continued cellular inflammation. My method of reducing hypertrophy is by opening through the mucous membrane of the cheek and dissecting away sufficient cellular tissue to restore the contour of the face.

The next case is one which was referred to me nine years ago. The patient was at that time thirteen years of age, with the following history: At the age of seven she had both diphtheria and scarlet fever. Her throat and mouth were very sore and ulcerated. After she recovered from her sickness no attention was paid to the condition, and it was not until about a year later, when being treated by her dentist, that he found she was unable to open her mouth properly. The patient was taken to her physician, who stated that following the healing of the ulcers the parts contracted and held the jaws together by reason of the cicatrix. For several years unsuccessful efforts were made to correct this deformity, but the case was finally abandoned. In forcing food into her mouth the lower oral teeth were crowded back of the upper, which allowed the patient to take solid food. At the time I saw this patient I found her anemic and in a poorly nourished condition. Many of the temporary molars were in position, with the permanent molar crown protruding to one side. The gums were highly inflamed, and the first molars badly decayed, with one or more pulps exposed. The upper right central had been broken off, following decay.

This cast of the face which I present shows her thin face, protruding teeth, and receding chin. The ankylosis of the jaws was complete, but under ether I was able to force them apart by this system of jack-screws, which I designed to fit the case. Under this pressure I was able to break up the articulation on the right side, but was never able to make any appreciable impression on the left articulation, where the bony ankylosis seemed complete. With the assistance of her dentist, Dr. Joseph Kohn, I constructed interdental splints, between which this jack-screw was placed, screwed tightly, and allowed to remain half an hour at a time. This apparatus was applied several times daily and often allowed to remain during the night. Several times a year the patient was placed under ether, and the jaws were forced further apart. Owing to the lack of the development of the masticating muscles, due to non-use, the patient was at first unable to close her jaws, but by massaging and using them they slowly developed.

In the course of two years her teeth were filled, the gums rendered healthy, and the patient able to masticate food, although the lateral motion of the jaw was very limited. As the permanent teeth developed, from time to time new splints were required. I again

saw the patient in the fall of 1895, and found she had been able to maintain nearly all the space gained by previous operations. As her health continued to improve, I was able to force the teeth apart nearly one inch, which space she has, as you will see, been able to maintain with great comfort. You will also notice the great improvement in the form of the face, and that the lower teeth have been crowded forward and the upper ones have receded, until the occlusion is perfect. In 1897 the health of the patient failed, owing to pulmonary tuberculosis, since when no further attempt has been made to more than maintain the ground thus far gained. You will also notice that her articulation is distinct.

The next case I show you is a double hare-lip and cleft palate. This mask shows the condition of the child at the age of two months, when I operated. You will notice that the intermaxillary bone protruded forward beyond the lips about on a level with the nose. The nose was flattened. One unusual feature of this case was the fact that the cleft did not extend through the hard and soft palate. The operation consisted in freshening the edges of the cleft, burring a v-shaped notch in the palatal attachment, forcing the intermaxillary bone into position and suturing it with wire to retain it. Two weeks later I did the lip operation, leaving the redundant mucous tissue for the formation of a better lip. Two years later such tissue as was not utilized was removed. The child is now five years old, and as you will see, with the exception of some slight scars it has almost a perfectly formed lip and arch. The germs of the lateral incisors having been lost at the time of operation, the centrals do not come forward quite far enough to allow the incisors to occlude, but as the permanent incisors are now developing in front of these teeth I expect that the final result will be eminently satisfactory. In examining this case I should like to have you note the perfect condition of the roof of the mouth, the nares, and the nicely formed nose, also the perfect articulation of sound. This photograph of the child was taken at the age of two years and shows how quickly the nose and lip resumed its normal shape. The redundant tissue which the child drew back into her mouth at the time the picture was taken shows a dark shadow like the v-shaped notch which was usual in the earlier methods of operations for hare-lip. But as you see, there is still more redundant tissue than we require. To prevent this objectionable notch in the lip I am going to leave this as

it is for several years, and then operate with a view to removing the scars of the superfluous tissue.

I have largely followed Dr. Brophy's method in operating on these cases since he demonstrated it at the Congress during the World's Fair. The earlier the operation the better the result. I have operated as early as the second week.

Some one has asked whether in this case it would be wise to regulate the teeth so as to occlude with the lower incisors. In reply to this I would say, that the permanent incisors are erupted forward of the temporary incisors, and that they will probably occlude with the lower permanent teeth when erupted, but all of the rest of the teeth occlude properly, as you will see. If necessary the permanent teeth can be regulated.

Here is a mask of a young woman twenty-two years old, which shows the results following an operation by one of our most eminent surgeons in 1893, for the removal of necrosed bone on the right side of the lower jaw, caused by abscessed teeth. This was done before he had had an opportunity of seeing the more conservative methods in this operation, that is, from within the mouth. The pus had burrowed through the cheek, and the surgeon was led to believe that much of the jaw bone was necrosed. The incision, which was several inches in length, was made through the face along the lower border of the jaw, and all the jaw bone between the second bicuspid and the ramus was removed, including the periosteum. The ends of the bone were drawn together and held by silver sutures, and the wound in the face closed. You will see by the cast the deformity caused by the drawing of the left portion of the jaw around to unite with the ramus. There was a partial luxation of the left side of the jaw and a complete disarticulation of the teeth. A salivary fistula formed through the wound in the face, and for some unknown reason an ulcer several inches in length formed in the skin along the neck. The surgeon then placed the case in my hands, and my first move was to take out the sutures and draw the left portion of the jaw back into position, holding it there with an interdental splint. The wound in the face, which had not satisfactorily united because of the salivary fistula, was reunited with sutures and the saliva was directed into the mouth, by having the patient lie on her left side until the wound had healed. The ulcer on the neck quickly healed, and in the course of a few weeks the

space between the ends of the bones was filled in with granulations. The splint held the jaws in position for several months, when it was found that the new tissue had become sufficiently firm to hold the jaw in its original position, and to allow the patient the almost normal use of her jaws. When I reunited the wound in the cheek I dissected away sufficient cellular tissue to reduce the bunch on the side of the face.

Dr. H. W. Gillette, New York City: The contraction of the scarred tissue in the region of the wound is not going to draw the jaw around, is it?

Dr. Curtis: It has not yet drawn it around enough to cause any appreciable change in the occlusion of the teeth.

The President: Do you think it wise to expand the arch as soon as possible?

Dr. Curtis: There is no necessity for expanding the arch, and the molars occlude perfectly. I am inclined to leave the regulating until the permanent teeth appear.

This gentleman has kindly allowed me to demonstrate in his mouth the results of an operation for epithelioma. The primary seat of the disease was in the left cheek near Steno's duct, and the patient thinks the trouble was caused by a broken molar which irritated the cheek. Before my attention was called to the case a small growth had been burned away. This reappeared in the course of a few months. I found a tumor about half the size of a peanut, the base of which was half an inch in diameter. I injected cocain around and resected it. This left an opening of fully one inch, but the wound healed quickly. In about six months the disease recurred, this time including the soft tissue of the maxilla. The growth was then removed by a cauterizing injection applied by the family physician. Three months later the bone was found to be involved, and within a very short time the disease seemed to spring up afresh, involving both the cheek and maxilla. It was decided to make a more extensive operation, so about one-half of the mucous membrane of the cheek and one-half of the superior maxilla were removed. The wound healed rapidly, and in two weeks the patient was able to have an artificial denture to protect the antrum and to facilitate speech. Three months later the growth was again discovered in the cheek at the original seat of the disease, extending into the antrum. At the patient's request I injected into this growth a

fluid prepared by Dr. Alexander of Boston, which the patient had formerly used. All the infiltrated tissue was destroyed and the parts became healthy. At the beginning of the trouble the patient's health was greatly impaired, but under treatment it steadily improved. I should have stated that a microscopical examination showed the first tumor removed by me to be an epithelioma. The prognosis in these cases should be very guarded. I have had satisfactory results in about two-thirds of those treated. The rule is that the disease returns at regular intervals, but thus far this patient has continued well and there are no signs of a return of the trouble.

Both these young women had disease of the antrum. Miss B., whose dentist had treated her for a year and a half, gradually failed in health and blood-poisoning set in. Several of her teeth were abscessed, and the second bicuspid, which was also abscessed, had been extracted, and the treatment of the antrum was through the socket. I operated on this case under cocain, making an opening at the base of the malar and well above the roots of the molars. The object of making an opening at this point (the method of which I demonstrated fifteen years ago) is not only to allow opening into the antrum at the thinnest portion of the bone, and to facilitate curetting, but to prevent the mucous from flowing downward, as happens when the opening is made through the tooth-socket. Treated from this position the mucous membrane quickly recovers its normal function. The antrum was filled with mucous cysts, pus and granulations, and about two-thirds of the mucous membrane had been destroyed. The case progressed rapidly and new membrane quickly formed to cover the denuded area. I had about concluded that the process of healing was complete, when an offensive odor led me to again open the antrum, and I discovered a tumor the size of a small olive far back under the eye. I completely curetted this away and packed and dressed the antrum with gauze as before, continuing the dressing until the membrane was reproduced. Success followed and the patient is in good health to-day.

The chief object in showing this case is to encourage beginners in this work, who should not be discouraged if they are not successful in the first operation. It is safe to state that ninety per cent of these cases are caused by alveolar abscess. It is my custom when the bone has been denuded in whole or in part to thoroughly

roughen it with a sharp curet or bur, trim away the edges of the mucous membrane, even when there is none found except at the edge of the antral orifice, firmly pack with gauze, and change it every few days until inflammatory action is well established and the blood vessels are forming. Hemorrhage is then checked and the antrum packed with aristol, which does not absorb moisture. This supports the blood vessels, which rapidly form to complete a network all around the antrum. Great care must be exercised in removing the aristol, which should be renewed every two weeks until the mucous membrane has formed, which usually requires from four to eight weeks. The antrum is then douched daily until the epithelium is of sufficient strength to carry off the mucus through the natural channel, when the opening into the antrum is allowed to close. My average time for successful treatment of antrum cases is six weeks.

The next case, Miss J., was a complicated one. She came to me in June, 1900, with the following history: Ten years ago she found she was becoming deaf, and since that time she had been under almost constant treatment for her hearing and nasal catarrh. Some time before this she had a right upper molar and bicuspid treated, their pulps having died. The treatment was unsuccessful, however, and both the deafness and the catarrhal conditions increased. At times the right side of her face was swollen. In May, 1900, it became sore and several spots like boils appeared, accompanied by swelling and pain. The case was brought to me early in June, and I diagnosed it as multiple abscess of the cheek, induced by antral disease and fistula from the abscessed teeth. This patient also suffered from blood poisoning and was anemic and tubercular. The abscessed teeth and antrum were first operated on, and by the latter part of July, when I left the city, I had succeeded in establishing a normal condition in the antrum, and in healing all but one of the nine abscesses in the cheek, which was done without opening through the face. I left the patient in the care of her physician, who advised her to go to a hospital to have the treatment continued. The surgeon in charge, who was not familiar with the new method of treatment, insisted upon opening into the antrum, and allowed the abscess to break through onto the face. Upon my return to the city two months later I found the antrum filled with pus, and there was also present a discharging ulcer of the cheek. Furthermore,

there was paralysis of the right side of the face, which was not present when I last saw the patient. As you now see, health has been apparently restored to the parts through my treatment, and with the exception of a small scar on the cheek and a slight paralysis which grows daily less, a normal condition seems to be established. The catarrhal trouble was due to antral disease, the mucous membrane of the antrum being completely destroyed and thrown off and the walls denuded. I had some difficulty in restoring the mucous membrane in this antrum on account of occasional infection from the cheek abscess. The antrum is now being douched every other day, is free from pus, and for the past month has been secreting healthy mucus. The patient's health is nearly restored and her hearing is much improved.

Dr. Gillette: How about the condition of facial paralysis?

Dr. Curtis: The paralysis is very much diminished, being scarcely noticeable. That side of the face has been treated with electricity during the last two months.

FASTENING RETAINING BANDS.

BY GEORGE M. CAMERON, D.D.S., CHICAGO.

There will be very little trouble with retaining bands coming off if the following method is used: Make bands larger than for cap or crown and as wide as possible on lingual side; punch or drill three or four holes through lingual part and counter-sink same on outer surface, leaving inner surface rough. Try on; remove and clean with alcohol; dry thoroughly, and fill with plenty of "Fellowship" cement, well mixed and thin. I formerly applied cotton or absorbent paper around tooth to protect from moisture, but with the "Fellowship" cement this is not necessary. Cleanse tooth with alcohol; dry with chip blower; place band in position, and push to place with napkin; hold for three or four minutes, when the cement will be set. Any surplus can be removed then or at next sitting.

SOLDERING HINT.

BY L. C. TAYLOR, D.D.S., HARTFORD, CONN.

When soldering crowns or bridges requiring a number of pieces of solder, first pickle well in acid so surfaces will be bright, then place solder in quantity about as needed, drop a few drops of sticky wax on it to hold solder in place, put borax over the wax, and heat

up slowly to dry out. Then with blow-pipe bring the mass to a white heat, allowing the wax to burn out, and see how quickly the work will be completed without the solder crawling with borax or dropping from some slight jar of the case. The solder for a full plate can be put in place when plate is cold under the above method with great satisfaction. It has been suggested that the borax would flow with the wax, soak into investment, and crack the porcelain, but I have soldered with this method for more than a year and have never had a porcelain crack. Several friends to whom I have suggested this plan report that they are employing it all the time with gratifying results.

TO REMOVE CONTENTS OF ALVEOLAR ABSCESS.

By E. L. STEVENS, D.D.S., PARIS, KY.

Many methods have been suggested for the removal of the contents of an alveolar abscess after it has been opened. I make use of the saliva ejector which is attached to my fountain spittoon. First, take out the mouth-piece and insert three or four inches of glass tubing, then take a second piece of tubing, hold it in the flame of a Bunsen burner, bend to an angle of about twenty degrees and draw it until it breaks, which gives a good tapering point. Cut off small end up to hollow part with a file, as you close the tube when drawing. Now connect this piece of glass tubing with the first one with a piece of rubber tubing about two inches long, which forms a joint that you can work in any direction. Insert point of tube in canal if large enough, or if not, into pulp chamber, and fill around it with wax, making it air-tight. Then turn on water, and if there is any matter in the cavity or canal it will be drawn out. If anything does pass out you can see it through the glass tube. A hollow metal needle would probably answer the purpose as well or better than the glass one.

ART IN VULCANITE.

By G. H. THOMPSON, D.D.S., HONEOYE FALLS, N. Y. READ BEFORE THE ROCHESTER DENTAL SOCIETY, OCT. 8, 1901.

To make a rubber plate requires artistic as well as mechanical skill. There is no doubt that the dentist possessing the latter has a great advantage over the one possessing only the former. He can make a plate that will be mechanically correct and give good service,

even though it appears in the mouth as if made for any one of a dozen different persons, so far as esthetic effect is concerned. When both attainments are combined in one individual, and art and utility go hand in hand, then we have in the finished denture something that will answer for only one person and will be both a source of comfort to the patient and a pleasure to the friends who are obliged to see it from day to day.

We are taught to sacrifice appearance for service, but there are few cases where the rule is necessary. We should endeavor to work into each plate a distinct individuality that will stamp out the false look which brands the majority of artificial sets. The patient of forty requires something different from the one of twenty or sixty.

My plan for reproducing the features is to make articulating models of wax as guides. While preparing them I study the features, the contour of the face and the action of the muscles. The patients can be of great assistance if you explain your methods and plans; they will manifest as much interest as you take and will often call attention to points that might otherwise be overlooked.

A perfect occlusion is just as essential to the esthetic effect as it is to the mechanical use of the denture. I know of no method by which we can obtain this and be absolutely sure it is correct. When building out the articulating models it is a good plan to have the patients open and shut the mouth repeatedly, you watching the place each time, but be very careful not to divulge what you are aiming at, and they will unconsciously close correctly.

Another important item is to select a set of teeth suitable for the age and temperament. Admitting that the gum teeth come nearer to reproducing the color of the natural gum, there are very few of our patients who raise the lip high enough for the gum to be noticeable, and it is next to impossible to follow out Dr. Bonwill's or Dr. Snow's ideas if these teeth are used. By employing plain teeth we can give a distinct individuality to each tooth, besides arranging a denture for mastication which will be as near perfect as anything artificial can be.

Discussion. *J. Requa*, Rochester. The doctor advocates plain teeth and the Bonwill or Snow articulator, which is correct, as a full denture cannot be properly articulated on a straight open and shut articulator, although some dentists still attempt to do it. One artistic touch in a vulcanite plate is to make sure that when finished

it shall contain no more rubber than is actually necessary for sufficient strength and to give proper fullness to the face. The contour is of necessity generally made about right, but in other parts of the plate we frequently see a wrong and useless distribution of rubber. To particularize, immediately back of the incisors the rubber should be barely thick enough for strength, and in finishing that part of the plate the dentist should have in mind the tip of the tongue of the one who is to wear it. Allow as much room and free play as possible, even though the plate at that point be a little weakened thereby. A liberal amount of rubber in the central portion of the arch will supply strength and not be in the way of the tongue or food. On the lingual side of the bicuspid and molars there should be only as much vulcanite as is compatible with strength, in order to give the sides of the tongue plenty of room. This is trite advice, but seems to be needed, judging from some of the dentures I see.

ESSENTIAL OILS; THEIR APPLICATION IN DENTISTRY.

BY DAVID STERN, B.S., D.D.S. READ BEFORE THE CINCINNATI ODONTOLOGICAL SOCIETY, FEBRUARY 28, 1902.

In his paper on putrescent pulps (DENTAL DIGEST, June, 1900), Dr. A. H. Peck says: "I would that we could all be first-class chemists, both analytical and synthetic, for then we could subject our medicines to the necessary tests and analyses, to determine whether or not they are best suited to successfully combat the various conditions to which they are being applied." The fact that the action of many drugs, especially of the essential oils, used in dentistry has puzzled all the investigators of these mysterious bodies is probably due to the similarity in chemical construction. The literature on this subject, not very extensive as far as dentistry is concerned, is furnished by a few able men who have written scientifically. I have taken great liberties with the writings of Drs. Black, Peck, Burchard, and Harlan, all of whom have devoted much time and care to the study of the subject of to-night's paper.

Being nearly alike in chemical reactions, the essential oils are distinguished chiefly by their physical properties. They consist mostly of terpenes and their close derivatives and are of the class of hydrocarbons, having the common formula $C_{10}H_{16}$, of which turpentine oil is the most familiar representative. They are disposed

to absorb oxygen from the air and pass into camphors, two atoms of hydrogen being given off for each atom of oxygen taken on. This oxygen, in connection with moisture and heat, is again given off in the nascent state, and it is probable that it is the nascent oxygen which has the antiseptic and disinfecting action, as it chemically destroys septic matter. By "disinfection" I mean the destruction of living germs of disease, that is, disinfection is accomplished by the use of germicides.

In the practice of medicine the essential oils are not considered of practical importance as disinfectants, although experiments have been made with pathogenic bacteria. The results obtained with one—the bacillus of typhoid fever—show the time required by various oils to kill the microbe :

Oil of cinnamon, of Ceylon. 12 minutes.

Oil of cloves. 25 minutes.

Oil of thyme 35 minutes.

Thymol. 35 minutes,

while the oil of turpentine required more than twenty-four hours, and peppermint, eucalyptus, cajeput, wintergreen, and camphor took more than six days.

In dentistry we apply many other disinfectants and antiseptics, such as heat, hydrogen peroxid, permanganate of potash, bichlorid of mercury, etc., but the essential oils are considered of advantage as dressings for pulpless teeth, abscesses, putrescent pulps, etc., being readily applied to the diseased part and left there until the dentist sees the patient again. The important point is, with which of the oils are the best results obtained?

Dr. Burchard states that the essential oils act as protoplasmic poisons, without coagulating albuminous matter. They probably differ in germicidal power, the oil of cassia leading in this respect, the oils of cloves, eugenol ($C_{10}H_{12}O_2$), which is the active principle of oil of cloves, eucalyptus, gaultheria, etc., following in the order mentioned. With the exception of the oil of peppermint, which has a cooling effect, they have a tendency to produce a warm and in some cases a burning sensation when applied in the mouth.

Dr. Peck has given us the results of investigations made in his bacteriological laboratory. To determine the irritating or non-irritating properties of these oils, he made a large number of experiments on his own person and also in connection with sores artifici-

ally produced on guinea pigs. He found that while the oil of cassia stands at the head of the essential oils as a antiseptic and is an excellent germicide when applied to suppurating surfaces, it is most poisonous and irritating in its effects upon soft tissue. On account of these characteristics it is not recommended as a dressing in the root canals of teeth. It also has the tendency to discolor the teeth, and this discoloration is difficult to overcome. There is a difference between the oil of cassia of China and the oil of cinnamon, which is a product of Ceylon. It has been shown that the oil of cinnamon is not so irritating to the soft tissue as the oil of cassia.

The oil of cloves, consisting of caryophyllin ($C_{10}H_{16}$) and the oxygen oil, eugenol, is non-irritating to soft tissue, leaves no discoloration and is effective in destroying microbes. It is therefore recommended for general use in the treating of pulpless teeth.

The oil of eucalyptus possesses more powerful antiseptic properties than phenol (carbolic acid), but it is not so irritating. Faust and Homeyer from the commercial oil obtained sixty per cent terpene ($C_{10}H_{16}$), thirty per cent thymol ($C_{10}H_{14}$) and the remainder an oxygenated compound ($C_{10}H_{16}O$) which they named eucalyptol. On account of its non-irritating qualities it is a splendid agent to place in root canals after the removal of the pulp.

Oil of wintergreen is a subject of disagreement between investigators, one holding that it is an excellent antiseptic, another, that it is useless in restraining the development of bacteria. It is composed principally of methyl salicylate ($CH_3C_7H_5O_3$) and does not belong to the class of terpenes previously mentioned. It is, however, surely a good agent to disguise the taste and odor of other drugs.

There are undoubtedly many others of the essential oils which have curative properties, but those which we have enumerated are the popular ones of dental practice. Although not an essential oil, there is a carbohydrate which is used in treatments as freely as all of the essential oils combined. It is phenol, the so-called carbolic acid, which in a concentrated solution (ninety-five per cent) is a powerful escharotic on soft tissue, and when applied to the dental pulp forms a strong coagulum, but it is not considered an important antiseptic. It is in connection with some of the essential oils that its general popularity exists, and there is no remedy which is more liked by the profession than Black's "1-2-3."

The irritating effect of the cassia seems to be modified by the mildness of the wintergreen, and the coagulating power of the phenol does not appear to be as great in the presence of the cassia and wintergreen. It seems that by the combination of the three in the prescribed proportions a new chemical union is formed which does not possess the properties of the individual factor and is highly satisfactory in the treatment of diseased tissue.

The fact that often the oils do not give the favorable results anticipated may in a measure be due to the adulteration of the drugs. Especially are those from the Orient liberally treated with alcohol and domestic drugs, and few of them will stand an analytical investigation.

Discussion. *Dr. H. A. Smith*, Cincinnati: An antiseptic, if we take carbolic acid as an example, depends upon its soluble action. The essential oils are only slightly soluble, and for this reason they are preferable, because the antiseptic quality lasts longer. The potency of carbolic acid is soon destroyed by dilution. If the oils had perhaps one-half that potency I think they would be equally as good. The most soluble ones are effective for the shortest time.

Dr. J. S. Cassidy, Covington, Ky.: The subject of the essential oils has always been a fascinating one to me because of their complex nature, and because they all contain more or less terpenes. It is well known that these latter become oxidized and give up free oxygen and camphor. These oils also contain other bodies as well as terpenes, and I had thought of criticizing one remark the essayist made, but which he afterwards modified—that terpenes were the active principle of all these oils. From time immemorial oil of cloves has been a domestic antidote for toothache, the wise old women realizing it just as we do, without the science. Years ago Dr. Hunter stated that all a dentist needed was arsenic and carbolic acid, a pound of one and a barrel of the other. If I were limited to the use of one of these oils I should select oil of cloves. The terpenes of these oils when oxidizing change their colors, darkening them, especially oil of cassia. Oil of cloves turns dark yellow, which action is due to a camphor, sometimes called a resinous matter, that is soluble in water. When I find the teeth discolored by this camphor I remove the stains with alcohol. I agree with Dr. Smith that carbolic acid is a poor antiseptic, losing its identity by solution in water. I have always felt that the health-giving

quality of the atmosphere in the pine forests of Kentucky, North Carolina and elsewhere was due to the setting free of the essential oils distilled by nature from these trees.

Dr. Smith: I would ask if the odor given off by the oils while oxidizing is antiseptic or beneficial in any sense?

Dr. Cassidy: The odors that come from bodies like musk bring to us part of the musk itself. If the odor comes from oil of cloves, it is still the oil containing the active principles of the terpenes and the eugenic acid, but that portion of the oil which develops into a resin of course prevents the bacteria from acting on the part affected. Oils which develop into acids, like oil of cassia, are more irritating to tissue than those containing alcohol. Dr. Peck has been very enthusiastic in investigating along these lines. When formaldehyd was brought out he applied a cloth saturated with it to his leg, so as to note the effect. Ulceration set in, and he was a very sick man for three weeks, no remedy that he tried being effective. Finally he applied pure oil of cloves, and the sore healed in a few days.

Dr. A. G. Rose, Cincinnati: Is it true that chloro-percha will follow oil of eucalyptus?

Dr. O. N. Heise, Cincinnati: I have always advocated the use of essential oils in the treatment of pulpless teeth and putrescent pulps, but the idea that you do not want to use anything which coagulates is a mistake, as a coagulant at times is necessary to give nature a chance to forget herself, so to speak.

Dr. Stern: In replying to Dr. Rose, gutta-percha is soluble in oil of eucalyptus. Replying to Dr. Heise, coagulation is oftentimes needed, and I have no idea of depreciating the use of carbolic acid. The greatest difficulty in making these experiments is the fact that we cannot always secure pure chemicals.

RULES FOR WELL REGULATED DENTAL SOCIETIES.

BY S. H. VOYLES, D.D.S., ST. LOUIS.

When you are elected president of a dental society, after many secret deals and a public candidacy of several years, come out strong in your inaugural address that the office came unsought, and advise all the outsiders to drop animosities and work for the good of the society. This reads well and makes people think there may be something in you after all. It also lets the bosses know that you are to be trusted.

" All young members are to be encouraged—to pay their dues. If a young man shows a disposition to take an active interest in society work, appoint him on a committee to raise "steen" hundred dollars for a library. This will consume his energies, and in three months he will be too subdued to be further in the way.

If a young man in any manner intimates that the honors are rotated within a sacred circle, he is a "knocker," and his further utterances should be attended to by the boss in his most ferocious and effective way.

If there are several young men who are subject to delusions and who threaten to act in concert, call a special meeting at the boss' office, and amend the by-laws so that a member shall not be eligible for secretary until he has paid dues five consecutive years, and can't be president until he has been in good standing thirteen years. This will encourage the growth of the society and make it a power in the land. Furthermore, by the time those upstarts get control you may be dead and won't care.

After you have held all the honors possible for many years, and have been deposed—start a new society. You will of course be elected president. It may live only a year, but what do you care? Always be IT or start trouble.

When possible it is well to belong to both a state and local society, as you can then swap influence in one for influence in the other—to your advantage, of course.

Most people are timid—the more noise you make the more competitors for society honors will be scared off.

If the office which you hold permits a badge, hang it in your operating room. Your patients will wonder if you are a member of a German band, and this will give you an opportunity to explain the honor that is yours.

It is also a good plan to have your official status—present and ex—printed on your letter and bill-heads, some even advise it on your envelopes. This shows to your patients the high standing of the dental profession—through being served by such prominent men as you.

If you have ever been associated with a man eminent in the profession, keep your head shut until he is dead, and for three years after—to be sure he is good and dead. Then write up all his methods and present them to the society as your own. If anyone

catches on he will be too polite to you to call you down in public. When you are president of a society always have the newspaper reporters attend the meeting. The public is much interested in and reporters are paid to record the fact that the meeting was presided over by the president, Dr. S. U. Reiamit, and that Dr. H. I. Caloric read a paper advocating the use of hot air as a specific in the treatment of pyorrhea alveolaris.

It is rumored that if your society papers are typewritten, and put on one side of each sheet only, they are more likely to be published by the editors of the dental journals.

It is also an advantage to live on or near the Atlantic coast. Editors and manufacturers—dental—have strabismus, they can't see a western man without strong glasses—tumblers preferred.

ARTERIO-SCLEROSIS IN PYORRHEA ALVEOLARIS.

BY FRANK L. SIBLEY, D.D.S., ROCHESTER, N. Y. READ BEFORE THE ROCHESTER DENTAL SOCIETY, FEB. 11, 1902.

Some years ago Dr. C. N. Peirce advanced the theory that pyorrhea was due to the gouty diathesis, and since that time the profession has been questioning as to its correctness, little if any scientific work having been done along the line of original investigation. Writers upon this subject may be divided into three classes: Those who claim it is a local condition; others, that it is constitutional, the middle ground being occupied by the remainder.

To save time I would take my stand with the last-named class. Let us take the theory of Dr. Peirce, that pyorrhea is a local manifestation of lithemia, accepting it as the most reasonable solution of the question that has been advanced. If we apply it clinically, the result will be that many patients who come to us with well developed pyorrhea give no history of lithemia, either in themselves or family, and if you examine the calculus on the roots of the teeth, you will find no trace of uric acid or any of its oxidations. To the humble follower of the faith this is not comforting, and I have heard faith defined as believing in something that is not true.

While it would amount to presumption on my part to defend so eminent and scholarly a gentleman as Dr. Peirce, whose long experience and ripe judgment should win for his conclusions at least thoughtful and studious consideration, at the same time I am glad to take my stand under his banner and fight manfully for the

cause, if I may be permitted to qualify it, or explain how, in my opinion, uric acid acts in originating the diverse pathological conditions ascribed to it: First, in the chemico-mechanical way, or its direct or local effect in setting up irritable and inflammatory states of the tissues. Second, as a toxin, acting indirectly through the nervous system, giving us a line of neuroses, functional in their incipency, but often with resultant changes in structural integrity.

That an excess of uric acid in the system acts as a direct irritant to the nervous system, especially the sympathetic in its vaso-motor fibers, seems to be clearly shown by the apparently incontrovertible provings of Haig as to the effect of an accumulation of uric acid upon circulation. Let us draw upon our own observation for illustrations of the diversified and often diametrically opposite variations of function in the two great organs we are considering, under different conditions of innervation through a common channel—the vasomotor portion of the sympathetic. The hot blush on the cheek of modesty, the ashen pallor on the face of fear, beads of perspiration upon the brow of responsibility, the parched breath upon the lip of embarrassment, are but passing shadows of the fitful play of vaso-motor innervation.

What is true of the vascular condition of a part under disturbed innervation, is equally true of structural changes that may follow—seemingly opposite conditions resulting from common cause. It is my belief that to this extent lithemia is a factor in the etiology of pyorrhea. I do not think the ground we have usually taken is tenable—that uric acid is precipitated upon the roots of the teeth by a kind of osmosis from the blood, there becoming an irritant causing absorption of the process and recession of the gum; but as a chemico-mechanical irritant or a toxin in the blood, bringing about changes in the capillaries which we term arterio-sclerosis or hardening of the coats of the arteries.

We can readily understand that if the capillaries of the blood supply to the teeth become affected in this way there is but one result possible—lack of nourishment to those organs and their ultimate loss. We have all had the experience of seeing well-developed pyorrhea in subjects that give no history of lithemia in themselves or family. One may examine the calculus found on the roots of the teeth and find no trace of uric acid or any of its oxidations.

Now, if we inquire into the etiology of capillary sclerosis we may

find it easier of solution. The cause of this condition may be considered under the headings of heredity, age, sex, alcohol, syphilis, gout, rheumatism, certain acute infections, high living and hard work. In Professor Osler's terse English, the onset may be said to depend in the first place upon the quality of arterial tissue which the individual has inherited; and secondly, upon the wear and tear to which he has subjected it. Age is a very indefinite expression; that a man is as old as his arteries may be a trite saying, but it is true. It is failing arterial nutrition that produces advancing age and cuts off most men's chances of reaching a century of existence.

Habits largely influence the production of arterial sclerosis, however, and give to lives of self-denial or self-indulgence their corresponding reward of longevity or punishment of short life. Of course, the gross alteration of atheroma is undoubtedly a disease chiefly of middle and advanced life; but the finer changes of arterial sclerosis may be determined much sooner in childhood or early youth. In fact, there is no doubt that individuals are born differing in thickness and strength of arterial walls, as much as in the structure of other organs. Since men are more frequently affected with alcoholism, syphilis, gout, and subject to more mental and physical strain than women, it follows that the preponderance of cases occur in the male sex. Alcohol acts in many ways to bring about arterial degeneration; first, it overexcites the heart so that the vessels are subjected to greater strain; second, it disturbs digestion, causes liver cirrhosis and kidney insufficiency, which load the blood with poisons.

Syphilis causes so much thickening of the inner walls of the vessels as to lead to great diminution or final obliteration of their caliber. It also attacks the brain vessels by preference, because syphilitic arteritis is localized in arteries supplied with lymphatic sheaves. Certain acute, infectious diseases, especially typhoid fever, malaria, influenza, scarlet fever and diphtheria may lead to arterial sclerosis, either by injuring the vasomotor nerves and thus leading to changes in the vessel walls, or by directly affecting the endothelium by their specific microorganisms or toxins. Chronic diseases like gout, rheumatism and diabetes, are frequently attended by arterial sclerosis. Toxins like ergot and lead produce protracted, spasmodic contraction of the small vessels. Overfeeding and drinking not only produce simple plethora of the vessels, but in addition

load the blood with toxins, especially in high livers of sedentary habits. Yet, as an initiative, there must be peripheral obstruction to produce hypertrophy of the heart; for Strassberg geese may be stuffed to repletion to supply the market with *foie de gras*, or young porkers fattened for the butcher, without producing cardiac enlargement.

Hard work acts by arising the blood pressure, subjecting the heart to hypertrophy and the vessels to strain. This is especially true if the work be accompanied by depressing psychical emotions, or accomplished under circumstances of prolonged mental and physical strain. To appreciate properly the importance of arterial sclerosis we must begin by divesting ourselves of the idea that the blood-vessels are mere tubes for the conduction of the blood; they are not mere appendages of the heart, but the heart is rather an appendix to the blood-vessels; for low in the scale of life the circulation is carried on without the heart. The study of the blood-vessels is the study of the ultimate processes of life, for not only have they the mechanical functions of contraction and dilation, but they have also the living functions of oxygenation, nutrition, and all of that wonderful and little understood group of changes which are classified as metabolism. Nature as yet works here in her secret laboratory, and we must be content with the study of changes visible to the eye.

FIRST THERMOMETER.—The first sealed thermometer was made some time prior to 1634 by Ferdinand the Second, Grand Duke of Tuscany; he filled the bulb and part of the tube with alcohol, and then sealed the tube by melting the glass tip. There appears to be considerable doubt as to who first employed mercury as the thermometric liquid; the Academia del Cimento used such an instrument in 1657, and it was known in Paris in 1659. Fahrenheit, however, appears to have been the first to construct, in 1714, mercury thermometers having trustworthy scales. The use of the boiling point of water was suggested by Carlo Renaldini in 1694.—*The Engineer*.

TEETOTALERS BORN, NOT MADE.—Dr. Archdall Reid, one of the leading scientists and evolutionists of England, has just published "A Study in Heredity," in which he says, "teetotalers are born, not made." The author states that temperance is not an acquired moral virtue, but an inborn characteristic. He says: "The teetotaler abstains not because of his strong moral fiber, his power of self-control, but because of lack of inborn desire for alcohol." Dr. Reid claims that our well meant temperance efforts must continue to fail to attain the desired end so long as we permit inebriates to beget offspring and to hand down the inborn alcoholic diathesis.

Digests.

PORCELAIN FILLINGS. By R. Ottolengui, M.D.S.. New York. Viewing porcelain from the practical standpoint, where, when, and how shall we use it? Perhaps its chief attractiveness will always be its resemblance to tooth substance, but I would call your attention to other important virtues, two in particular: First, it is a poor conductor of heat; second, it is made out of the mouth and inserted complete. Either of these, and especially both combined, will in many instances elect porcelain to a precedence over all other materials.

Let me speak of it first from the aspect of its poor conductivity. While modern practice preaches that the dental pulp is often better out of than left in a tooth, this very dogma has arisen from the fact that a metallic filling in close proximity to the dental pulp endangers the vitality of that organ. It is because of the constant death of pulps under large gold or amalgam fillings, with consequent abscesses, that we have come to see that in many instances, considering the perfection of antiseptic treatment to-day, it is a safer and wiser proceeding to remove the pulp prior to inserting the filling, rather than to risk its sudden death and the infection of the apical regions. This is undoubtedly sound doctrine, but it is applicable only in proportion to the age of the patient. That is to say, the younger the patient the less excuse have we for intentionally devitalizing a pulp. In view of this self-evident fact even the most radical destroyers of pulps bend every energy towards the conservation of the pulp in young teeth, and to this end they pin their reliance to temporizing with plastics. Here, then, we arrive at a point where even the American dentist discards gold and utilizes a material which is perishable in the environment. Here, then, we find a class of cases where porcelain must appeal to us, not because of its beauty, but because it is more permanent and more conservative of the health of the tooth than any other material.

Coming to the second advantage, the fact that the filling is made out of the mouth and inserted quickly and in one piece, we find that once more it appeals to us in exactly those places where we reluctantly discard gold. That is, there are many localities where, because of the time required for a gold filling, it would be impossible

to maintain dryness of the cavity sufficiently long to permit us to insert a perfect filling. Many such cases will occur to your minds, so that I need mention but a few. Some of the most beautiful fillings that I have seen made by Dr. Jenkins have been along the gum margins on the buccal surfaces of lower molars, the fillings being half under the gum. We all have had the experience that even after the use of gutta-percha or other packing to push away the gum, we have met such a flow of saliva as to preclude the successful use of gold, so that we have been compelled to rely upon amalgam. Here it is the very best practice to use porcelain, and yet it is a situation where the beauty of the work is absolutely unimportant. In true American fashion we choose it because it is the most durable and the most useful material.

Another difficult position is where the improper use of clasps has resulted in abrasion and subsequent caries about the necks of molars, usually extending below the gum and commonly very sensitive to the touch. Amalgam is the common reliance, and too often the electro-chemical action caused by the contact of the gold clasp with the amalgam filling leads either to reappearance of caries or death of the pulp. Here is a place where porcelain is useful, both because it is a non-conductor and because it is made in a single piece and may be quickly inserted, requiring a minimum period of dryness. I show a specimen of this class of work where it will be noted that the cavity has been cut entirely below the line of enamel, a fact which would almost always preclude the successful use of gold, whereas it does not greatly hinder the utilization of porcelain.

Gum Colored Porcelain.—A somewhat similar position, where however we may also take advantage of the artistic appearance of porcelain, is shown in another specimen where the filling is made entirely of pink porcelain. Often in mouths where there may be no recession along the palatal side of the teeth we find extensive recession of the gums along the labial aspect of the cuspids. The exposed roots become very sensitive, and perhaps for this reason proper brushing is not accomplished, with the result that caries sets in, extending under the free margin of the gum to a considerable distance. Here we frequently find great difficulty in using a clamp, so much so that very many ingenious devices have been invented to aid us, yet with half a dozen in our cabinet we too often meet cases where the rubber-dam seems inhibited. But even where we succeed

and place a gold filling, it is a large glaring display of gold, carrying constant menace to the pulp which it so closely overlies. The use of gutta-percha for a day or two will push away the gum sufficiently that a perfect matrix may be made, showing all the outline of the cavity edge with absolute accuracy; and much more quickly and certainly with less pain to the patient a porcelain filling may be made, which, constructed of the gum-colored porcelain, absolutely defies detection and restores the tooth apparently to its original size and shape.

High Versus Low-Fusing Porcelain.—Advancing now to the extreme possibilities of porcelain, I must touch for a moment upon the controversy between the advocates of high and low-fusing bodies. I believe there is a general feeling throughout the country that the high fusing is the more reliable. This has come about by the constant repetitions of a few writers favoring high-fusing bodies, while the more conservative experimenters with the low-fusing materials have felt it best to devote their time to mastering the many intricacies of technique, satisfied that their confidence in Dr. Jenkins' material would sooner or later manifest itself beyond cavil. While I believe that the Jenkins body is the best for practical purposes, I must in common honesty admit that I have not used any of the other higher-fusing materials. Consequently my deductions must be considered with due relation to the fact that I discuss high-fusing porcelain only from the claims and exhibited work of its advocates, and not from practical experience. I have, however, endeavored to make matrices with platinum, some being in one instance furnished to me by Dr. Head, from which I may argue that I have experimented with the proper kind of platinum. In my hands, at least, the platinum matrix limits the use of porcelain. Remembering that after all there must be some space between the filling and the tooth because of the necessary presence of cement, we must admit as an honest basis of argument that many cavities can be as easily managed with platinum as with gold foil. But I think the fact cannot be disputed, that in proportion as the size and depth of the cavity increases the platinum becomes less and less a possibility. This, if true, entirely discounts the high-fusing method, for the only advantage that even its most ardent admirers make for high-fusing material is that it is stronger, which, however, is not true. But for a moment admitting this, we must allow that in pro-

portion as the porcelain is exposed to the stress of mastication the demand for strength increases; yet it is exactly in compound cavities that the platinum matrix becomes increasingly inaccurate in relation to the extent and depth of the cavity.

Large Contour Fillings in Molar Teeth.—When Dr. Jenkins was last in this country I endeavored to persuade Dr. Head, or any other high-fusing-body advocate to make a filling for the same cavity as that for which Dr. Jenkins would make one, and I had in mind one so extensive that I doubted whether the test could be met with a method relying upon platinum for a matrix. I failed to get the clinicians to agree upon such a test, and at that time did not feel sufficiently skillful myself to risk the condemnation or seeming failure of the Jenkins body, which might result from my own lack of ability. For this occasion, however, I have made a large contour filling as a specimen of what even I, with my limited experience, can accomplish with the Jenkins body. To those who have not tried it I wish to state that I find it more difficult to get a perfect result working with a dried tooth out of the mouth than when working on living teeth. It seems impossible to prepare the cavity margins as perfectly as when operating upon living tissue.

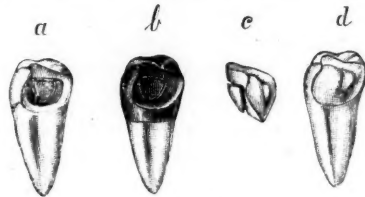


Fig. 1.

In the specimen now shown (Fig. 1) I have endeavored to reproduce a case from actual practice, one which combines every useful characteristic of porcelain. In the illustration *a* shows the cavity; *b* the extent to which the matrix is made to overlap the edges, thus affording a guide in contouring; *c* is the filling with undercut groove for retention, and *d* the filling in the tooth, showing restoration.

In the dried specimen the pulp chamber has been encroached upon, but that was an accident, which, however, only increases the value of the test by deepening the cavity, for it dissipates the argument that the shrinkage of the Jenkins body distorts the shape of

the matrix. In the practical case the patient was a Miss of ten who presented with the disto-lingual section of a first molar lost, and caries extending below the gum at the distal aspect, the pulp being closely approached but not exposed. I will ask those who examine the specimen to decide for themselves the chance of success with a gold filling of that magnitude, in the moist mouth of a nervous, irritable girl of tender age. Yet a filling in every way as perfect as the specimen shown was made and inserted, the gum having been first pressed away by temporary fillings of gutta-percha, and the tooth kept dry long enough for placing the filling by using cotton rolls, with a combination clamp which depresses the tongue besides holding the cotton roll in place. The saliva ejector, of course, also assisted. In examining the specimen shown I will ask the gentlemen to observe the accuracy of the marginal adaptation, and to turn the tooth in the fingers to view the contouring from every aspect, as well as the restoration of knuckle, which was, of course, not an essential feature in this instance, where the second molar had not as yet erupted.

Having touched upon the word knuckling, I may pause a moment to reply to the queries which may have been aroused in the minds of some. The accurate restoration of contour so as to produce contact is largely a matter of skill and comes with experience. Here, however, the gold matrix is more helpful than the platinum, because the gold can be made to cover so great a surface of the tooth beyond the cavity margins (Fig. 1 b) that we have not merely an impression of the cavity, as when using platinum, but in effect an impression of the whole tooth with a cavity in it. This gives us the lines that fairly indicate the restoration required. It is good practice to overbuild a little and then obtain space by separation, to permit placing the filling. This assures contact when the teeth resume their normal places.

Durability of Jenkins' Porcelain.—Before passing from the availability of porcelain I must say a word in regard to the comparative durability of the Jenkins material. That which is at present offered is an improvement both in color and strength over what was first placed on the market. The present product in my hands not only gives great satisfaction, but seems to have extraordinary strength, even thin edges being surprisingly resistant to stress. As an explanation of my meaning, formerly I found that

if by chance the material had been permitted to extend beyond the margin of the cavity, as indicated in the matrix, the feather edge resulting was quite brittle, and would shatter if brought into contact with a paper disk. Now I find that even very thin edges of this character may be ground away with a fine cuttlefish disk without breaking, thus allowing reduction to the original edge and polishing of the same. I also find that after setting a filling, should it seem requisite, the margins may be polished with strips as safely as where metallic fillings are similarly treated. The Jenkins porcelain will scratch glass, which I think a good evidence of its density.

Method of Construction.—I pass now to a brief consideration of the construction of the porcelain filling, and here I call attention to the fact that, as an advocate of the Jenkins method, I speak of porcelain *fillings*, whereas the high-fusing men speak of porcelain *inlays*. I think this significant, as inlays are presumably more shallow than fillings, and act more as a veneer than as a true filling. It has seemed requisite to all porcelain workers, so far as I have seen recorded in their writings, that the aperture of a cavity should be larger than what we may term the interior arrangement thereof. This conclusion has been reached empirically from the fact that it is needful to be able to remove the matrix without alteration of shape, and finally to insert the filling whole rather than in particles as we do gold or a plastic. A necessary result has been that the sole reliance for retention has been upon the so-called cements. The failures with porcelain have been almost exclusively due to the failure of the cement. Curiously enough, it has been found that whereas the cement adheres to the cavity walls, whatever their shape, this is not true in relation to the porcelain, the filling coming away clean. Consequently the need of roughening the under surface of the filling was early discovered, but even this in many instances was an inadequate reliance. Having the advantage of observing Dr. Jenkins at work, I noted the manner in which, with diamond-copper disks he cut grooves in the porcelain, and I saw at once the advantage of his method, as well as the fact that it had never been adequately explained in print. At the next public discussion of this subject I therefore ventured to describe it as a continuous groove which results in forming upon the under side of the filling a shape similar to the head and neck of a collar-button.

(Fig. 1 c.) Since preparing porcelain fillings in this manner I have not lost one. Nevertheless, I have long felt that a totally different cavity preparation was a great desideratum in this work, if true permanency were to be achieved.

New Cavity Preparation for Porcelain.—I take the liberty of hoping that I have solved this problem. I believe I have found a simple yet effective cavity preparation, whereby the porcelain inlay will be mechanically retained, as is a gold filling, the cement being utilized merely to seal it into position and only in a measure acting to retain it. I therefore take pleasure in exhibiting to-night the result of my experiment. The specimen shown is an extreme example, chosen because working with dried teeth I can better show the cavity formation in a large cavity than in a small one, and also because in this way I once more show the possibilities of filling exceedingly deep cavities with the Jenkins body. (Fig. 2 *a*, cavity showing countersunk V-shaped groove; *b*, the matrix in the cavity; *c*, the filling in place.)

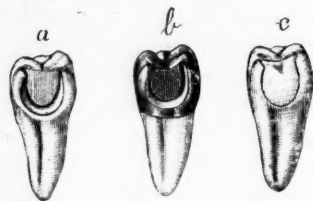


Fig. 2.

The new cavity formation which I suggest to porcelain workers may be likened in homely phrase to the sliding cover to a wooden box. The principle is the same, but it differs from the box cover in that the groove in which the filling slides to place must not have paralleled sides, but on the contrary, should be approximately V-shaped, with the widest divergence toward the entrance of the cavity. This style of cavity preparation will be particularly applicable to compound cavities which reach the masticating surfaces, as the mechanical arrangement will materially resist the stress of mastication, thus reducing the strain against the cement to absolutely nothing, the filling being so placed that even without cement it could not be displaced by normal stress (though of course in the upper jaw gravity would dislodge it.) This cavity formation may

also be advantageously used in approximal cavities, the filling sliding in either from the labial, buccal or palatal surfaces, as indicated by the requirements. A great advantage in approximal situations is that with this shape of cavity the need of very great separation is avoided.

Extreme care, however, will be needed in making the matrix, and especially in removing it, and I advise that if in removal a close scrutiny detects a slight alteration, either the overhanging portion of the gold which hindered its free withdrawal must be cut off with scissors, or else the divergence of the cavity margins and the sliding grooves must be altered to facilitate what, in moulder's phrase, would be called "the draw." After such alteration either in the cavity or in the matrix by trimming, the matrix should be returned to the cavity and readjusted. This should be repeated till a perfect matrix is removed without alteration in shape.

Removing the Matrix.—I will offer another little suggestion which has recently given me considerable satisfaction. The matrix, as we have been repeatedly told, must be "teased" out of the cavity. I find that this may be greatly facilitated by using an explorer point on the end of which is placed a tiny piece of separating or wedge rubber, the pure gum affording just enough friction to start the matrix, without tending to alter its shape. In large cavities, a small ball burnisher over which is stretched a bit of the smallest French rubber tubing serves the same purpose.—*Items, April, 1902.*

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INFLUENCE OF SEXUALITY IN THE DEVELOPMENT OF THE TEETH. By T. Elhanan Powell, D.D S., Chicago. Read before Chicago Odontographic Society. In the study of comparative anatomy one is wonderfully impressed with the apparently close relation existing between the development of the teeth and the sexual instinct. Throughout all nature the male of almost every species has some special organ which makes it more formidable in battle than the female, or else is endowed with some feature of beauty which enables it to compete with the other males for the favor of the females. Darwin, in his "Origin of Species," tells us of the battles between alligators for the possession of the females, how they bellow and whirl around while fighting. We have also been told how the males of certain hymenopterous insects have been seen to fight for a particular female, who sits by, a nonpartisan beholder, and allows herself to be escorted away by the victor.

Battle is the prevailing method for winning the favor of the female among most of the mammals, and those not endowed with horns are almost invariably possessed of enormously developed tusks, which are used for offense and defense; even those animals which we look upon as not being in the least obstreperous engage in desperate conflict during the season of love; male hares, moles and squirrels, which are not ordinarily pugnacious, wound each other severely at such seasons. Richardson tells us of the skeletons of stags having been found with horns tightly locked together.

The males of the carnivora are not endowed with special fighting tools on account of the extreme specialization of the teeth. The felidae, the canidae, and ursidae are all specially endowed with formidable teeth and claws which are used both to procure food for themselves and for weapons of offense and defense.

In the male norwhal the left incisor appears to be the sexual weapon, as it grows in length sometimes nine and ten feet, and is entirely absent in the female. Darwin tells us that "with many animals the cuspid teeth in the upper or lower jaw, or in both, are much larger in the males than in the females, or are absent entirely in the latter, with the exception sometimes of a hidden rudiment. Certain antelope, the musk deer, camel, horse, boar, various apes, seals and walrus offer instances."

The ornithorynchus, a species of mole, belonging to the lowest order of mammalia, has a curious feature, consisting of a spur on the foreleg, resembling somewhat the poison fang of a serpent, but not having a poisonous secretion, and on the leg of the female there is a hollow into which the spur of the male appears to fit.

The marsupialia is a low order of mammalia, depending on swiftness of flight for protection, and the young are carried in the marsupial pouch in front of the abdomen. Thus the mother protects her young. There appears to be no special development of the teeth on account of sex in this order, as they are utterly devoid of cuspids, except the American opossum, the dasyure and wombat of Australia. The dasyure have well developed cuspids, and are much more fierce in combat than any of the rest of the marsupials.

The prominent exceptions to excessive cuspid development among the mammalia is the norwhal, already mentioned, the kangaroo, the beaver and the elephant; all these have an unusual development of the central incisors. These teeth in the norwhal and the elephant

appear to be cuspidal, but are developed from the intermaxillary bones, and are consequently true incisors. In the beavers, which appear to be the most highly intellectual of all the lower animals, the incisors are specially adapted to cutting down trees, which they use in building their houses. I might mention, in passing, that the beaver is the original pioneer. House-building with him is a regular vocation born of the necessity for continual gnawing. His teeth grow from persistent pulps, and were he to cease gnawing his life would pay the forfeit, as the teeth through disuse would curve around so as to prevent the animal from obtaining food, and he would soon starve to death.

The lower incisors of the kangaroo are shaped like a pair of shears, and are used for shearing grass. The two halves of the lower jaw are separate and movable horizontally, one incisor in each jaw. In the order of the ruminants the cuspids are nearly always absent wherever horns are present. The upper incisors are also usually absent in this order when the horns are present, or vice versa. And there is always greater development of the horns of the stag than of the female.

The wild boar is an excellent example of the influence of the sexual organs on the teeth. There is no male animal which has a greater opportunity to indulge the sexual nature than the wild pig, and the tusks become enormously developed. This same species shows none of this unusual development when castration has taken place early and the cuspids of the female are of ordinary size.

The cuspids of the horse are larger in the male than in the female unless castration is performed early, and not only are they larger, but there is an enormous development of the neck and mane. The unusual neck development is also noticed in the male of the common cow. The rhinoceros has no cuspids, but has six incisors, and they bear an inverse relationship to the absence or presence of horns.

In the higher order of mammalia, including all of the primates, we begin to notice the influence of intellect on specially organized features; as the scale of intellect is ascended less and less use is found for organs which serve the purpose of battle in the lower orders. The development of the cuspids is in inverse relationship to the orthognathism. The lemurs have almost a horizontal facial angle, and next to the lemurs is the old world baboon. Then comes the new world monkey, which has a facial angle of 45 degrees with a very small cuspidal development.

Man has a facial angle of above 75 degrees, and the difference in the development of the cuspids between the sexes is nil. Endowed with the intelligence to utilize nature and art, with all the culture of civilization to assist him, nature has avoided any unnecessary work on the cuspids, but has left on the face of the sensual her unmistakable mark, i. e., a coarse and heavy development of the lower face at the expense of the intellectual faculties.

With all the intellect of man, I doubt if it can be proven that he possesses superior moral fiber to many of the lower animals. It is true that nearly all the male mammals fight for the favor of the females, yet there is exercised a chastity and a discretion far beyond that of any civilized race.

From the lemur to civilized man there is a gradual reduction of the prognathism and a corresponding development of that portion of the nervous tissue contained in the cranial cavity. Man's is the nervous system *par excellence*, but this nervous development is at the expense of the physical, and when carried to the extremes of luxurious civilization the moral also becomes perverted. The Indian with all of his savagery and ferociousness of nature is more moral sexually than the most civilized nations of Europe. The explanation for this lies in the difference in the amount of effort necessary to sustain life. The savage's life is a strenuous one, and he is compelled to use all the physical effort he is capable of to wring from nature that which means life to him. On the other hand, wealth with all of its enervating influences saps the physical and moral life of modern Europe, and is beginning to claim its victims in America.

The typical mammalian formula is forty-four teeth, while civilized man has but thirty-two. We sometimes notice a reversion to the original type in the form of supernumeraries which we look upon as abnormalities. In the lower tribes found in Australia and Africa it is not at all unusual for fourth molars to be found in place. Their teeth are much larger than those of civilized man, and much better formed. The third and fourth molars are as large or larger than the first and second. They have a decided prognathism, and the head is small, with thick, dense, cranial bones. The cuspid teeth are large and prominent, which is more noticeable in the males than it is in the females. The sexual nature of lower forms of man is very strong, the difference consisting in the rareness of sterility

and the universally strong and healthy offspring. Where food can be readily obtained, the death rate among the children is very low, uterine troubles are practically unknown and child-birth merely an incident. In civilized man the highly developed nervous system leads to moral perversions of every description, and among women diseases of the procreative organs are so universal that to find a perfectly well woman is something remarkable.

All nature gives evidence of a close relationship between the sexual nature and the teeth, and when it ceases to influence their development, retrogression and degeneration, both moral and physical, have set in. To quote Darwin: "If we look back to an extremely remote epoch, before man had arrived at the dignity of manhood, had he been guided more by instinct and less by reason than are the lowest savages of the present time, our earliest ancestors would not have practiced infanticide or polyandry; for the instincts of the lower animals are never so perverted as to lead them regularly to destroy their own offspring, nor put a check on the increase of population by the practice of licentiousness."

Why the sexual nature influences the development of the teeth is a problem which has never as yet been answered. No one has been able to explain why a stag never renews his horns after castration, but it is evidenced by many naturalists that he does not. The stag of the reindeer seems to be an exception, it being claimed that the horns of the reindeer are not sexually affected. There must be a close relationship through the sympathetic nerve. The sympathetic nerve is composed of a series of ganglia forming two cords, one on either side of the spine, connecting the ganglion of Ribes on the anterior cerebral communicating artery with the ganglion impar situated in front of the coccyx. The gasserian ganglion on the root of the fifth pair of nerves affects pretty much all the frontal portion of the head, and by pressing the finger on the ganglion impar in front of the coccyx sympathetic sensations can be distributed directly to the superior maxillary and to the teeth. I have heard that irritation of the clitoris affects the incisors and cuspids of the lower jaw. Although the ganglia of Ribes is difficult of access, in some cases pressure put over the ganglion will send sensations down the length of spine. These ganglia communicating with the cerebro-spinal nerves make a network of influence beyond the province of the novice to trace.—*Review, March, 1902.*

AN IDEAL BICUSPID CROWN. By Richard L. Simpson, D.D.S., Fincastle, Va. Much has been written in the journals of late about there being no ideal bicuspid crown. Porcelain "cup" crowns, as well as ordinary porcelain, have been advocated by workers in this material because they most nearly approach the ideal, i. e., having no display of gold at the buccal or grinding surface and at the same time being strong enough to withstand the stress of mastication.

The bicuspid here described is more easily made than a porcelain one, and fulfills the three requirements demanded of it. The root is prepared as for an ordinary Richmond crown; the band made, festooned, fitted, and ground off to be under the gum at the buccal

FIG. 1.



FIG. 2.



FIG. 3.



surface, but rather wide at the palatal (Fig. 1). Solder the floor to the band with 22-karat solder, leaving a slight projection of the floor like the brim on a straw hat. Trim the mesial and distal parts of the cap so it will pass the approximate teeth to its position on the root; solder the pin to the cap, and then fill in with 20-karat solder the angle formed by the band and projection of the floor. Replace on the root and take the bite and impression.

After mounting on articulator, select a suitable *saddleback* plate tooth, making sure that its palato-buccal dimension is long enough; grind to dotted line of Fig. 2, to its proper position; back it with 24-karat gold; place it on cap; invest and fill the V-shaped space with 18-karat solder, letting the solder melt by heating the investment from the bottom. The diagram of the cross section (Fig. 3) is an explanation in itself.

The reasons for reinforcing the band should be only too evident, as the ordinary band never restores as much tooth as has been cut away, and in case the gold should happen to show, its appearance is that of a gold filling. (Who ever saw an ordinary band look

like a gold filling?) The buccal curve of the crown is continuous from the edge of the band to the edge of the porcelain cusp. The solder at the palatal part of the band does not run off in the final soldering, being prevented by floor of cap. A saddleback tooth almost never breaks in soldering, and its strength when so used is beyond question. A crown so made is a thing of beauty, and will satisfy the most esthetic, to say nothing of patient.—*Cosmos, April, 1902.*

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DEOPATHIC CHRISTOPATHIC PARANOIAC PRAYER.

Under the above caption the *Alienist and Neurologist* quotes from some publication of the "Christian Science" cult the following prayer for a dyspeptic uttered by one of the leading lights of that peculiar order. Gastroenterologists may find in it some food for thought:

"Holy Reality! We believe in Thee that Thou art everywhere present. We really believe it. Blessed Reality, we do not pretend to believe, think we believe, believe that we believe—we believe. Believing that Thou art everywhere present, we believe that Thou art in this patient's stomach, in every fiber, in every cell, in every atom, that Thou art the soul, only Reality of that stomach. Heavenly, Holy Reality, we will try not to be such hypocrites and infidels as every day of our lives to affirm our faith in Thee and then immediately begin to tell how sick we are, forgetting that Thou art everything and that Thou art not sick, and therefore that nothing in this universe was ever sick, is now sick, or can be sick. Forgive us our sins in that we have this day talked about our backaches, that we have told our neighbors that our food hurts us, that we mentioned to a visitor that there was a lump in our stomach, that we have wasted our valuable time, which should have been spent in Thy service, in worrying for fear that our stomach would grow worse, in that we have disobeyed Thy blessed law in thinking that some kind of medicine would help us. We know, Father and Mother of us all, that there is no such thing as a really diseased stomach; that the disease is in the Carnal Mortal Mind given over to the World, the Flesh, and the Devil; that the mortal mind is a twist, a distortion, a false attitude, the Harmatia of Thought. Shining and Glorious Verity, we recognize the great and splendid fact that the moment we really believe the Truth, Disease ceases to trouble us; that the Truth is that there is no Disease in either real

Body or Mind; that in the Mind what seems to be a disease is a false belief, a Parasite, a hateful excrescence, and that what happens in the Body is the Shadow of the lie in the Soul. Lord, help us to believe that all evil is utterly unreal; that it is silly to be sick, absurd to be ailing, wicked to be wailing, atheism and denial of God to say, 'I am sick.' Help us to stoutly affirm with our hand in Your hand, with our eyes fixed on Thee, that we have no dyspepsia, that we never had dyspepsia, that we will never have dyspepsia, that there is no such thing, that there never was any such thing, and that there never will be any such thing. Amen."

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PLASTER WARPAGE. By Dr. Stewart Spence, Harriman, Tenn. In the late Prof. Richardson's valuable and well-known text-book, "Practical Treatise on Mechanical Dentistry," fifth edition, is given an account of an experiment in plaster of Paris by Dr. Bowman Macleod, late professor of the University of Edinburgh, Scotland, which would, if the professor's deductions were correct, be of exceeding value. As I have lately conducted a series of experiments along this same line, and arrived at conclusions opposite to those of Dr. Macleod, and as the subject is very interesting and important in itself, the more so because it has entered into the standard literature of dentistry, I here submit the matter to the attention of the profession.

To present the case clearly, I will quote from Dr. Richardson's book. He, commencing at the third paragraph on page 167, says: "A singular and hitherto unobserved phenomenon in connection with the setting of plaster mixed with plain water is pointed out by Dr. Bowman Macleod of Edinburgh, from which he draws conclusions so practically important concerning its influence in modifying the adaptation of a dental substitute, as well as in other respects, that space is here given to such of his observations as are deemed essential. A block of plaster was cast within a square of two feet, which on the following day showed an expansion of five-sixteenths of an inch in length and breadth. But I found, he says, that not only had the plaster expanded, but the upper surface was raised; and on sawing the block through in a diagonal direction, I found that instead of the block lying dead upon the plane beneath, it presented a concave surface toward the plane, the highest point of which measured one-half inch. This shows, first of all, that the plaster

had not only expanded, but had done something more than its now greater length and breadth would lead one to suspect; for in thus taking a concave form it must have either retracted to an equal extent, or expanded in an irregular manner, causing warpage. Making still further experiments by casting plaster in the ordinary impression cup, I found invariably the same results produced, and that the center portion—the palatine portion—of the cup always presented an open and well defined space between the upper surface of the impression cup and the lower surface of the hardened plaster. This circumstance, therefore, would produce in your model a fault similar to that resulting from the sucking of the waxy or resinous impression materials, and, as you can readily see, would give you a much higher dome than that of the natural arch. Hence the rocking of the plate, which has hitherto been attributed, if my deductions be justified, to every cause but the right one. * * * Naturally, then, I began to inquire how this defect might be overcome; and I find that by the addition to the water with which the plaster is mixed of potash alum (hitherto used entirely for the purpose of quick setting in impression making) in the proportion of from three to four ounces to the gallon, you will entirely overcome the irregular expansion and consequent warping which takes place in coarse plaster of Paris as used with water alone. Here you have the two blocks of equal dimensions; one cast with water and the other with potash alum water. It requires no explanation on my part to point out the difference between the two. In one case the expansion is five-sixteenths of an inch; warpage, one-half inch. In the other, expansion, nil; and warpage, ditto; and the two surfaces dead. * * * The conclusion I draw from this is, that all plaster, either for impression making or for models, should be cast with potash alum, when strict and definite results are to be obtained, and that in the case of gum block work the opening of the joints * * * may now be entirely prevented by the use of potash alum for both matrix and model within the flask."

It may be remarked in passing that the professor in writing this closing sentence evidently overlooked the fact that plaster yields under compression, and that the pressure of the model, through the rubber, on the blocks forces them outward and apart, compressing the plaster investing them. But that is a small matter.

Potash Alum.—If it were true that potash alum (the sulphate of

alumina and potassium; now officinal) would totally prevent expansion of plaster of Paris, it would be a very important fact; but I have every reason to believe that such is not a fact. The attention of the dental profession in America was first called to potash alum by Dr. Thos. Fletcher of England. In referring to some experiments I had made in plaster with ammonia alum (the sulphate of alumina and ammonia; the officinal), he said: "Alum, as properly understood, means the sulphate of alumina and potash (potash alum). Its action with plaster of Paris is totally different from that of ammonia alum, which for some years past has been sold in the place of potash salt, to which the name was originally given. A solution of potash alum, boiling hot, instead of softening plaster, will make it so hard that it is difficult to cut or break, and it will cause plaster which has lost its power of setting to set again, although not sufficiently hard for use."

I obtained some of the then rare potash alum, but was unable to produce with it casts that were especially difficult to cut or break. While setting hard, they did not set much harder than plain plaster, even when mixed with water boiling hot. Worse still, I was unable to get any less expansion with potash alum than with the ammonia variety. About a year ago I renewed my experiments with potash alum, but with similarly unsatisfactory results. Some eight or ten casts, poured in an upper impression cup, in proportions of alum averaging from six to forty grains to the fluid ounce of water, showed best results with six grains. The very large quantities set free a gas which, if the mix was not stirred long, produced a porous cast; and long stirring causes expansion. Its power of reducing expansion was, at the best, but about fifty per cent or less. Thinking that possibly they have a different alum in Great Britain to that in use here, I wrote to the Dean of the University of Edinburgh, as I had heard Dr. Macleod was dead. My letter was referred to Dr. Munro, Lecturer on Prosthetic Dentistry, who answered it, admitting that in his opinion Dr. Macleod's experiments "did not prove that there was no expansion, but only that there was no warpage in the one cast with potash alum, and that the expansion was less." This confirmed my views as to the limited power of potash alum in controlling the expansion of plaster. Dr. Munro also gave me a piece of information which led to the solution of the mystery of the "doming" of the two feet square block of plaster

cast by Dr. Macleod. He said that Dr. Macleod had surrounded his plaster with an iron band, and that the plaster square was only two inches in thickness. It immediately occurred to me that this iron band had caused the doming of the central region by preventing lateral expansion. And if this were true, it would, of course, follow that the flanges of our impression trays act similarly. I had previously been impressed that the large space often seen between the tray and the plaster impression at the palatal arch was too great to be accounted for by the linear expansion of the impression.

I therefore imitated Dr. Macleod's experiment, though on a much smaller scale, by pouring plaster in a cast iron ring about four inches in diameter on a marble slab. In order to discourage this mix from bulging downward instead of upward, I laid a board on the top of the iron ring, but so as to not touch the plaster, and placed on this board a weight consisting of a zinc die and lead counter die. I then poured an equal quantity of plaster on the marble slab beside the other, but without any band around it. These casts when hard were each sawed asunder in the midst, and it was found that the encircled one had domed up, while the other remained flat. Thin pieces of paper could be drawn without strain from under the banded cast at any point distant an inch or so from its circumference. This experiment was again made, this time with a different plaster, but with similar results. The latter two casts were not sawed asunder, but tested for doming by moistening the surface of the marble slab and laying them down on the wet surface. The banded cast absorbed only the moisture near its circumference, while leaving a little pool in the center, but the other dried up the entire region on which it lay, and its suction to the slab was also much greater than that of the other.

Second Experiment.—Although this was conclusive, a further test was made thus: I took a smooth board about sixteen inches long, and screwed down on its face at each end a cleat, then poured plaster on the board reaching from cleat to cleat. This strip of plaster was about three inches wide and three-fourths of an inch thick; its length was thirteen inches. It was left free at the sides, and confined only at the ends. It was clear that if the warpage described by Dr. Macleod arose from his iron band, and not from any phenomenal disposition in plaster to draw up in its center, this strip of plaster would bow up at or near its middle, and that

another strip not confined by the cleats would lie flat. I had not long to wait, for in half an hour this bowing up was observable, and by next morning four sheets of paper could be inserted between the plaster and board at the point of greatest doming. It was then removed from the board to make room for the plaster of the next experiment, and on being placed back three or four days later it was found to have arched yet more; so much, in fact, that twelve thicknesses of the same paper would now go between it and the board. This gave a space of about one-twentieth of an inch. I am utterly at a loss to comprehend this latter warpage, for numerous experiments with plaster in impression cups seem to indicate that warpage does not continue after expansion ceases, and expansion ceases in a day or two.

Next, on the same board, but reaching not quite to the cleats, was poured a similar strip of plaster. This latter showed no bulging, but lay perfectly flat on the board, and remained so after being removed therefrom. At no time since has it shown any warpage. Having been allowed to expand laterally, it had no desire to bulge or dome. It may be doubted that plaster ever warps, as used in dentistry, except from the cause here indicated.

Unfortunately I found no way of carrying this line of experiment into the impression tray itself; but this was not necessary, for these previous experiments were demonstrative. The effort of the plaster to expand laterally meets with the resistance of the unyielding flange of the tray, and the plaster domes up at the palatine arch. I found by experiment that a tray with a removable flange, consisting of a strip of cardboard paper waxed on to the tray (from which the metallic flanges had been cut) before taking the impression, and stripped off immediately after, largely prevented this bulging by permitting almost free lateral expansion. But this is a doubtful advantage, for what the impression gains by preventing doming at the palate it loses from expansion outward, and therefore it is a question of two evils. In a mouth with soft palate the doming might be preferable to the lateral expansion.

It is obvious that a similar bulging occurs in the model, which meets in the buccal and lingual surfaces of the impression similar resisting walls to those met by the impression in the cup. Nor do these two bulgings counteract each other, for both proceed in the same direction. By this restriction of the lateral expansion and

doming in the center, the resulting plate would fit closely to the buccal and lingual surfaces, but rock on the palate. How far the removal of the entire upper portion of the palate by a relief chamber of large area would counteract the two domings under consideration, I cannot say, but should imagine the results would be good, especially if the tin used to produce the relief be only just thick enough to counteract the warpage without creating a permanent chamber.

However, this means of relief does not especially interest me, as I have found an agent capable of entirely preventing the expansion of plaster of Paris, and even, if need were, of producing contraction in it; and also because this warpage of impression and model is only one of several features which have to be considered in making vulcanite plates on plaster models in order to produce exact adaption, on which I have made some important discoveries from experiments, all of which I hope to be able to publish to the profession in a little while.—*Items, March, 1902.*

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COMBINATION OF PLAIN AND GUM TEETH. By H. Greely, D.D.S., Ellsworth, Me. For the last few years the trend in plate work is to use plain teeth in preference to gum teeth, even when the alveolar process is sufficiently absorbed to permit the use of the latter. The chief reason for this preference is the ease with which single teeth can be ground to the model, or, I should say, the lack of grinding needed by plain teeth as compared with block teeth. But when one takes into consideration the festooning and polishing of the rubber around plain teeth, the time and labor thus expended more than offset the extra work of grinding gum sections.

Another reason is the greater variation possible in the mounting of single plain teeth; but do dentists, as a general rule, avail themselves of these desirable features? Is it not a fact that nine-tenths of those using single teeth set them as evenly as possible, instead of trying to imitate nature and make the resulting denture look a little less stiff and artificial? Unless we are to avail ourselves of the desirable advantage which single teeth offer in the imitation of natural irregularities, I would use the gum sections in preference every time, for no one can deny that a mineral gum is far superior to any rubber or celluloid substitute now in use, as at their best and when freshly polished they are a poor imitation, but when they lose

their luster, which they soon do, they then become rough, slimy and offensive.

Thinking there might be a compromise between the two, last spring I took an upper set of gum teeth minus the molar blocks and ground the teeth all away, just leaving the festoon outline, as it is shown in Fig. 1, then ground these skeleton gums to the model, after which I selected plain teeth as nearly as possible like those destroyed, and ground them as nicely as I could to the indentations in the gums. Then proceeding in the usual way, I found I had a

FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



set of gum teeth in which I could make any variation desired. In this my first trial plate I packed pink rubber quite freely, so that the red or black rubber composing the body of the plate would not squeeze through and show. Then in the mouth an observer could not tell but that they were solid blocks.

When showing this first trial plate to Dr. Chilcott of Bangor, the thought occurred to both of us, Why not use in place of the pink or white rubber some of the numerous mineral bodies so much in use now? So I removed the teeth and gums from the old plate, remounted on a new model as before, then mixed some plaster and

invested the central and bicuspid blocks on one side; when hard enough warmed them slightly, so they would free themselves from the wax. When this was done there was quite a space left to be filled, and the more space the better, if mineral body is to be fused in it.

I filled in the space described with some low-fusing material, invested that side in sand and plaster, then cut the plaster from the face of the blocks, and sent to my friend Dr. Chilcott, who has an electric furnace and who kindly offered to assist me by fusing it. He of course had to add some body to the space left over the teeth, and this when fired gave it an excellent color and natural effect.

After remounting and finishing the plate we were agreeably surprised, for we had an irregular, natural-looking set of *gum* teeth. By this method one can lap one tooth over another, cant in or out, have spaces between the teeth, have flat gums or bulging, and if we desire one tooth shorter than the others, grind it off at the neck instead of the cutting edge. If, as is often the case, fuller gums over the cuspids are desired, add extra body and fuse it.

If manufacturers of teeth, already having the gum teeth molds in great variety, could by some means separate the tooth from the gums before baking, and have the gum veneers quite thin, thinner than they are now made, it would be comparatively little more work than at present to make an artistic looking set of teeth at reasonable cost. Rubber plates, which in so many instances are offered at such a ridiculously low price, can by the expenditure of more skill be enhanced in value and appearance so much the more. As regards the strength of this work, I omitted to state that in several cases of broken teeth on gum sets where the gum itself was not fractured I have ground out what was left of the tooth and fitted a plain one in its place, one which I first put in has lasted three years and is still all right.

If the tooth were countersunk at the upper end to allow the rubber, celluloid, or fused mineral to enter, it would strengthen the hold of the tooth to the plate. In the two plates I have made I used the single molars, but now wish I had used the gum blocks as at present made, for the set would look better, and being out of sight in the mouth it would be no advantage to set them uneven.

One can fracture any gum section by long vulcanizing, so I experimented with one set to see if it would break in the festoon

where the mineral was fused, I vulcanized it one hour and it came out all right. I then put it back and ran it another hour and found the gums cracked straight across, not following the outline of the tooth, and on the other side of the plate where no mineral body was used there was no fracture.

Where no fusing material was used I beveled the upper edge down toward the face of the veneer, and the lower edge of necessity had to be beveled up to fit the neck of the tooth in. It was dovetailed in so firmly that I fractured one corner of the gum in removing it from the first plate I made. I am rather fussy and particular in my plate work to have nice joints and well finished sets, but in these two plates I have purposely gone to the other extreme to show what irregularities can be produced.—*Cosmos, April, 1902.*

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LEPTOTHRIX RACEMOSA IN RELATION TO DENTAL CARIES. By G. W. Watson, L.D.S. Read before the Odontochirurgical Society of Scotland. In 1888 Dr. Vicintini of Italy made a most interesting and valuable discovery in connection with the organisms associated with dental caries. He found, figured and described an organism of a higher type than usually obtains in the mouth, which he said is invariably found in great abundance adhering to the teeth in gelatinous plaques, and which he named *Leptothrix Racemosa*. He asserted that this is the parent organism of most of the bacteria in the mouth, and it certainly looks as if there was same truth in this, as preparations made from scrapings of teeth exhibit all the different varieties usually found in the mouth as well as the characteristic peculiarities of *Leptothrix Racemosa*. Vicintini exhibited chromo drawings of this organism, and represented it as showing four different stages, the highest of which was an arrangement of spores round a central stem, forming club-shaped masses, and the organism which produced this spore was the parent form of nearly the whole forms of microorganisms of the mouth, *Leptothrix* filaments so common in the mouth being just portions of the stems. He described the parent organism as being composed of fertile filaments or stems containing in their interior gemules, and attached round the stems by very fine threads are a series of spores in six or more longitudinal series.

Little or no attention was paid to this important communication for some years till Mr. Mummery and Dr. Miller took it up and

were able to make out with certainty the club-shaped bodies described. Later on Dr. Williams worked at the subject and was able to show, by means of a series of beautiful photomicrographs, the various forms assumed by the organism, and established beyond doubt that this is a new and hitherto undiscovered microorganism. It is most remarkable that this organism has so long been overlooked by bacteriologists. Dr. Williams points out that this is probably due to the fact that the organism can be demonstrated only by special methods of staining, and that if mounted in balsam it does not show up at all.

Dr. Williams's method of preparations is as follows: Wash with a stream of sterilized water the surfaces between two teeth, and with a small sterilized knife scrape the surfaces. The pasty-looking mass so obtained is placed in a clean watch glass, and covered with twenty or thirty drops of a rather watery solution of methyl violet in aniline water for twelve hours, occasionally tearing it apart to allow stain to penetrate. Pour off stain and wash with sterilized water, and then with equal parts of glycerol, alcohol, and water. Remove this, and put a drop of mixture on a clean glass cover; put the stained mass into it, and invert onto a clean glass slide, when it can be examined with the microscope.—*Record, April, 1902.*

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URINALYSIS FOR THE DENTIST. By H. H. Boom, M.D., Philadelphia. Read before the Southern Dental Society of New Jersey, Dec. 18, 1901. On certain occasions it is not only desirable but essential that the dental practitioner shall make a clinical examination of a patient's urine. This is particularly true when it is proposed to administer a general anesthetic. A patient presenting for dental treatment may be suffering from an unrecognized or masked renal disease. If to such a patient a general anesthetic be administered, his physical condition becomes infinitely worse, and his disease, assuming an active phase, soon reaches a fatal termination. A few unfortunate cases of death in the dental operating chair during the administration of a general anesthetic have been reported.

If the dentist takes the time to perform a few of the simpler tests upon the urine of his patients, the results would show whether the administration of ether or chloroform be admissible. It is not expected that the dentist shall make an exhaustive examination of the urine

that is often required of the physician, but he should ascertain with certainty the presence or absence in the urine of albumen and of glucose. A knowledge of the specific gravity will prove of considerable help by indicating the tests necessary in our inquiry: In conditions of health the urine has a specific gravity ranging from 1015 up to 1025. Should the specific gravity be lower than 1015 the urine should be examined for albumen. If the specific gravity be much greater than 1025 a careful search for glucose should be made.

In obtaining the specific gravity of urine we can make use of the urinometer. Perhaps a neater method for obtaining the specific gravity of urine consists in the use of the specific gravity beads. An instrument is offered us in the shops that enables us to use the specific gravity beads with neatness and a fair degree of accuracy. It consists of a cylindrical glass tube, resembling a small test tube, constricted and open at both ends. Inclosed in this tube is a series of six glass beads, each bead plainly numbered; the beads bearing the numbers, "5," "10," "15," "20," "25," "30." The beads are placed in regular order in the tube, the lowest in number being at the upper part of the tube, the bead numbered "30" at the bottom of the tube. The glass tube is then constricted above and below the beads so that the latter cannot drop from the tube, although they can move freely along the tube without passing each other.

To use the appliance, we close the lower end of the tube and fill the tube with urine. We may find beads numbered "5," "10," and "15" leaving the rest and floating towards the top of the tube, while the other beads stay at the bottom of the tube. This would indicate that the specific gravity of the specimen was greater than 1015, as the bead numbered "15" had floated towards the surface of the liquid, but the specific gravity of the liquid was not as high as 1020, as bead numbered "20" was not upborne by the liquor. After using the instrument it can be readily cleaned by flushing it with water.

It must not be thought that all specimens of urine having specific gravities lower than 1015 or greater than 1025 necessarily imply existence of disease. Nor, on the other hand, should we infer the absence of disease in our patient if the urine has a normal specific gravity.

Trustworthy Test for Detecting Albumen.—We first make a

saturated solution of common salt, chlorid of sodium, in distilled water, being sure to add to the water all the salt that will dissolve, and if the resultant liquid is not perfectly clear and transparent, filter through cotton or paper. This solution will keep without change. To test for albumen, fill a test tube about three-quarters full with urine, then add the saturated salt solution until the tube is full of the mixture, add two or three drops of strong acetic acid, and holding the tube in the fingers by its bottom, heat the upper layer of the fluid over a bunsen flame, or lamp chimney, until the mixture boils. Then, without shaking the tube or its contents, examine the layer of fluid in the upper part of the tube, comparing its degrees of transparency with that of the fluid that was not heated in the lower part of the tube. If the heated portion of the fluid is in the slightest degree hazy or less transparent albumen is positively present.

To Detect the Presence of Glucose in Urine.—Place urine to the depth of an inch in a test tube. Add half as much liquor potassæ, U. S. Ph. Mix the two fluids by shaking the tube. Then add two or three drops of a five per cent solution of copper sulphate in distilled water. Do not heat this mixture, but allow the tube to stand undisturbed for from twelve to twenty-four hours in the cold. At the expiration of that time, if glucose be present, there will collect in the tube an ochre yellow to brick red precipitate of fine sand-like character of suboxid of copper. This test is a modification of Trommer's test, and unlike the usual form of Trommer's test, requiring application of heat, the formation of suboxid of copper can occur only through the presence in the urine of glucose and of no other substance.—*Items, March, 1902.*

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HOT CARBOLIC ACID. By N. S. Jenkins, D.D.S., Dresden. About a fortnight ago I had an inspiration. Life had become a burden because of an overgrown, anemic, timid, nervous, hyper-sensitive, seventeen-year-old German-Russian boy, whose heredity and whose training had bred the conviction that if he were uncomfortable there was something radically wrong in the construction of the universe. All European practitioners are familiar with the type. When grown to manhood men of this class can storm Plevna, or go through a winter's campaign in the Balkans laughing at danger and rejoicing in hardship, but are liable to faint when baring the arm for vaccination.

The temptation to temporize with such a patient is often almost irresistible, and sometimes, indeed, temporary operations are indicated; but in this case there was no question as to what duty required. Permanent operations were necessary, but how were the cavities to be prepared? Having selected one of the most difficult compound cavities, and with infinite precaution, prepared the edges and cut down the jagged masticating surface and dried it as well as possible, considering that neither cold, nor warm, nor hot air could be tolerated, I suddenly resolved to try hot carbolic acid. A bit of cotton was saturated with boiling hot carbolic acid and slowly and gently insinuated into the cavity. It worked like magic. Sensation ceased at once. In three minutes the bulk of the soft decay could be painlessly removed, and after two other applications the last vestige of diseased tissue was easily obliterated. Never had I seen an obtundent work so quickly or so effectually. The chip-blower could be used at once. Layers of softened dentin could be peeled off from over a nearly exposed pulp and a permanent filling made with unexpected ease.

Since then I have used this method in other cases, and have become convinced that in cavities in soft and immature teeth and with partially devitalized pulps which still cling to the walls of the root-canals with obstinate tenacity, and where gangrened pulps have brought teeth to the very verge of abscess, we have in hot carbolic acid a therapeutic agent of great potency. It is questionable if it will be of much value in cavities in dense teeth, or in cases of sensitive erosion, but if my original conviction is confirmed its combination with other agents—as for instance, cocain—will naturally follow and may greatly extend its field of usefulness. Twenty per cent cocain with hot carbolic acid seems more efficient.

It is most probable that others have used this remedy in the same way, for "there is nothing new under the sun," but never having seen notice of it, I hasten to impart the results which I have obtained, in the hope that my limited but promising experiences may lead to more thorough investigations in the way of alleviating human suffering.—*Cosmos, March, 1902.*

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SALIVA, AND SOME ACCOUNT OF THE WORK OF DR. MICHAELS WITH SAME. By Edward C. Kirk, D.D.S., Philadelphia. Read before the Academy of Stomatology, Oct. 22, 1901.

Last year a paper was published in the *International* (DENTAL DIGEST, Feb., 1901,) in which Dr. Michaels gave his views on the relation of the saliva to the production of erosion or chemical abrasion of the teeth, and made the remarkable statement that it was due to sulphocyanid of potassium. I had the opportunity a year ago of listening to his paper before the International Congress in Paris, and afterwards made a rather careful study of the paper upon sialo-semeiology, and I decided that if the opportunity afforded I would take occasion to make personal investigation of his remarkable claims, for they are remarkable. Hitherto the saliva has been regarded simply as a fluid containing a ferment, ptyalin, capable of converting starch into maltose, also some salts, mucin, and water. That is to say, it is a fluid which has a certain digestive property, but is mainly useful for lubricating a bolus of food so that it may be comfortably swallowed. Dr. Michaels, as the result of his studies, takes an entirely different view of the question. Apart from its physiological function, he regards the saliva as affording the very best medium which we have for arriving at a conception of the status of nutrition. He says the saliva more accurately represents the composition of the blood than any of the other bodily fluids. Physicians have been investigating the urine with reference to normal nutrition and pathological conditions, but Dr. Michaels regards the urine as of secondary importance in this relation. He says that it is an excretion by a gland specialized in character, and does not stand in such close physiological relationship to the blood-current as does the saliva. He holds that the saliva represents the blood-current more accurately, because it is a secretion from the blood, and that it may contain everything in the blood-stream which is crystallizable and therefore that is dialyzable through a glandular structure. He says that the saliva is swallowed as it is secreted and passes through the nutrition cycle over and over again, and in performing this evolution it picks up the soluble materials in the blood-stream and presents them in solution.

I became interested in the matter because, in the study of the diseases of the mouth, the theories held with reference to caries, and the question of erosion of the teeth, as well as of the invasion of the soft tissues of the retentive apparatus by bacteria, it seemed to me that the whole atmosphere of dental pathology had become

so beclouded with the bacteriological question that we could not see beyond it. We had gotten to the point where we were regarding every disease as produced by bacteriological influence, and had lost sight of the important fact that there were many cases in which, though bacteria were present, the same class of organisms that were exciters of diseased conditions, no pathological results occurred. There is something in the nutritional status of the individual, and that nutritional status is, of course, related to and dependent upon conversion of food in the organism, through the process of cell metabolism, into energy, tissue, and waste products, by which process there is produced somewhere along the line of nutrition the state which we call vitality or life. The question of internal vital resistance to disease invasion seems to be involved in the process of nutrition, and has a most important bearing on the predisposing causes of disease.

Dr. Michaels has found, and I think has very clearly demonstrated, that the percentage and character of salts found in the saliva bear a distinct relation to the intensity of the disease. As the blood-current becomes loaded up with these crystallizable waste products of nutrition, there is an osmotic overflow into the saliva; therefore the quantity of these contained salts is important evidence of the state of the blood, which in turn is dependent upon the nutritional status. He claims to be able to determine from an examination of the saliva and blood the disease of diathetic state. It seems from his researches that it is an extremely simple matter to be able to differentiate people into two large classes—those whom he calls the "hyperacid" individuals, whose saliva contains acid calcium and sodium phosphates, and possibly urea or uric acid salts, in quantities which may be detected and determined by the microscope. These salts exist in what he calls the "hyperacid diathesis," of which the rheumatic and gouty individuals are well-known examples. On the other hand, there is an opposite type which he calls the "hypo-acid individual," whose condition is characterized by a different class of salts in the saliva. After a little practice one may with great ease and readiness recognize the two classes of salts and so determine the diathetic states.

The technique of examination is extremely simple. A specimen of mixed saliva of all the glands is taken. The mouth is first rinsed with water, so as to remove the food particles; no attempt at steril-

ization is made. After a sufficient quantity—a dram or two—is collected, then with a dropping-tube several drops are deposited on a white porcelain tablet and the saliva is rapidly put through a series of qualitative tests, in order to determine its general character. The first test is made with one of the ferric salts, usually ferric chlorid, in ten per cent solution, in which we get a reaction showing the sulphocyanid of potassium, if it be present. The intensity of the color determines to a certain degree the diathetic state. Dr. Michaels has found in the gouty individual of the hyperacid diathesis that the sulphocyanid tends to disappear, so if he finds a saliva not giving any or a weak reaction to ferric chlorid he begins to suspect that the individual is of a gouty type. If the individual is of a rheumatic character and the amount of sulphocyanid is above normal, you get a more vivid coloration. When we speak of being "above" or "below" normal, the normal standard is arrived at by making examinations of saliva with respect to the sulphocyanid test in a number of individuals who are in normal health. So you obtain after a while a conception of the standard of coloration, and you can determine whether the coloration is too intense or wanting in intensity.

Another test that is made on the porcelain tablet is for the existence of ammonia or ammoniacal salts, and is done by Nessler's reaction, which gives a characteristic brownish color if any ammoniacal salts are present. They may or may not be present. Chlorids are determined by the addition of silver nitrate in a decinormal solution, using yellow potassium chromate as an indicator, which is a well-known test for chlorids in the laboratory. He makes a test for glycogen, the presence of which he regards as a measure of health in the individual. If it be present in the saliva, he says that individual is in good health. It is the material into which the proteid substances taken in as food are converted in an available form for assimilation, and its presence in the saliva indicates that the system has stored up a quantity more than sufficient for its needs. Its absence does not mean ill-health, but its presence is an indicator which has a strong bearing on the existing status of the nutrition.

The third test on the porcelain tablet is the reaction of the saliva with reference to litmus paper. A great deal of light has been thrown on the question of salivary reaction by the work of Michaels.

It is put down in the text-books as being alkaline or neutral. It may be strongly acid, alkaline or neutral, or may be both alkaline and acid, i. e., amphoteric. That is to say, where the saliva contains disodium phosphate, and where it also contains the acid sodium phosphate or acid calcium phosphate, one may get in the same saliva a reaction to either blue or red litmus paper. The same condition is found in urine. So the acidity or alkalinity is to be expressed in terms of the proportions of sodium phosphate or acid calcium phosphate present.

Dr. Michaels lays a great deal of stress upon the mode by which various kinds of saliva undergo decomposition. I saw salivas of all ages that he had kept for weeks, months, and even years, and these salivas were decomposed in various ways. Salivas from patients affected with some derangement of the liver decompose with a dark brownish or greenish coloration. In the hyperacid cases, the rheumatic and diabetic cases, the color will be more of a reddish type, and these color results of decomposition form part of the history of the case which enables him to make up his diagnosis.

The most striking feature of his investigation is the microscopical study of the salts in the saliva after they have been crystallized. In all the works upon urinalysis and physiological chemistry that I have studied—and I have gone over most of the standard authors, both in English and in French—I have found but one reference to the use of the polariscope in the study of these crystalline forms, though the study of the urine sediments and crystal forms is now elaborately worked out. Dr. Michaels has laid great stress upon the use of the polariscope in the study of these crystalline forms in the saliva. He differentiates these salts which are polarizable from those which are not, and thus makes a subclassification. He has found all the acid salts to be highly polarizable. The whole process seems to resolve itself into two things—first, the study of crystalline forms in saliva, with a view to understanding its chemical composition, that is, by making an analysis of it by the microscope and chemically by the use of reagents; second, to understand the pathological significance of these findings, whatever they may be. What does it mean when we find so much urea and acid calcium phosphates in the saliva? The bearing of such questions on diseased conditions is the final and most important problem.

I went so far with Dr. Michaels as to study his general methods,

and have reached a point where I am ready to begin the work. I have spent some months on it now. By beginning the work I mean seriously to take up the systematic study of salivas of a uniform line of cases of the same disease and to see if there is any common factor running through them, and to study those conditions as compared with normal conditions.

Dr. Michaels asserts positively that he is able to make a diagnosis of any well-known disorder by his method. The technique of making specimens is quite simple. He makes them in duplicate. A large drop of the saliva is deposited on a microscopical slide and covered with a round cover-glass. Alongside of that is placed an uncovered drop of saliva. One such slide is placed in a warm chamber so that evaporation takes place at about 105° F. That gives him specimens for immediate study. The other is allowed to dry spontaneously at room temperature, being merely covered over with a bell-glass to prevent particles of dust from coming into it, and is then studied under a microscope. I have brought with me to-night the microscope with a poliscopic attachment and some specimens which I would like to show to as many as can see them. I think you will agree that the appearance shown in these specimens of saliva taken from diseased individuals are, if not characteristic, at least strongly suggestive of that idea, and hold out the promise of great utility in the matter of diagnosis. Bear in mind that the quantity of salts present seems to be related to the intensity of the disease, and not only enables us to say, "This man is of such a diathesis," but when the characteristic salts are present in small quantities we will not regard him as a very sick man, and where the saliva is loaded down with them we have reason to suspect that the man is very ill; in the cases that I have studied thus far this fact seems to be borne out. If this investigation yields many of the results which it promises I believe that we have one of the most important means of diagnosis given to us in recent years. It furnishes us with a key that after awhile may present the problem of caries from an entirely different viewpoint. The question is constantly being asked why it is that this or that particular theory does not fit a certain case. I have very great doubts as to whether the type of caries seen in the mouths of young children or adults, where approximal surfaces are attacked and where the disease is running rampant, is the same as that found in the gouty or hyper-

acid type of individual, where it seems that an acid substance is exuded from the gum margin and where decalcification is girdling the tooth. Dr. Michaels finds that these different types of caries are related to diathetic states and to variations in the composition of the oral fluids, and that they have different causes. The nearer we get to an understanding of the original causes of this disease the better able will we be to prevent and cure it. I must say, with reference to my study with Dr. Michaels, that it was exceedingly gratifying and was one of the most hopeful things that I have met in dental pathology.—*International, April, 1902.*

* * *

ARE THE TONSILS TO BE REGARDED AS NORMAL, PHYSIOLOGICAL ORGANS OF THE BODY? By Francke H. Bosworth, M.D., New York. It is an ancient teaching, and one, I think, almost universally accepted both by the laity and by the profession, that the faucial tonsil constitutes one of the normal organs of the body in much the same sense that the liver and the kidneys do, and that it is endowed with certain important functions in the economy. It follows, therefore, that having important functions to perform, its absence or extirpation robs the system of those functions with a resulting deleterious influence. As to whether this teaching be a true one or not, I do not intend to make too positive a statement, and yet it seems to me that there is ample ground for questioning this view, in that it oftentimes seriously hampers us in carrying out what seem to me to be clear clinical indications.

The anatomists tell us that the tonsil is an almond-shaped organ, situated between the two pillars of the fauces, and that its inner face is marked by from seven to twelve openings, which openings constitute the orifices of a similar number of lacunæ or blind ducts; the organ itself being covered by normal mucous membrane which extends down into the lacunæ. And yet the anatomists tell us that even this is not a constant condition, and that in a large proportion of infants nothing is found more than a small aggregation of lymphoid bodies containing no lacunæ, and lying beneath the mucous membrane. When we consider the extreme liability in child life to the involvement of the lymphatic bodies in hypertrophic changes, it seems fair to suggest that really the healthy tonsil may be the one above described, viz., one which consists of nothing more than a small aggregation of lymphoid bodies underlying healthy mucous

membrane, and containing no lacunæ or blind ducts; and that the almond-shaped body usually described by anatomists is really a morbid growth.

The physiology of the tonsil has long been a subject of painstaking and laborious investigation, the problem being no nearer solution to-day than before. The same may perhaps be said of the whole lymphatic system, which, as we know, is found distributed extensively throughout the entire economy. Curiously enough, these lymphatics are found grouped rather extensively at that point of the human system where in the development of fetal life the hypoblast and the epiblast meet, viz., in the fauces, forming what is oftentimes called the lymphatic ring, and establishing four points where these bodies are aggregated in notable masses, viz., between the two pillars of the fauces, one on either side, forming what are called the faucial tonsils; in the vault of the pharynx, forming what is called Luschka's tonsil; and in the glosso-epiglottic fossæ at the root of the tongue, forming what is called the lingual tonsil.

Now, as we know, those masses between the faucial pillars have always figured in anatomy as forming normal anatomical and physiological organs of the body. Since the establishment of our specialty of larynology we occasionally meet somewhat vague descriptions of that mass of lymphatics in the vault of the pharynx, as constituting a normal anatomical and physiological organ of the body, under the name of Luschka's tonsil. These descriptions are very rare, very indefinite, and by no means constant in literature. I know of no anatomy or physiology which describes the masses at the root of the tongue in the same sense. Why this should be it is difficult to say, for it seems to me it is a fair conclusion that the masses at the vault of the pharynx and root of the tongue possess claim to a position as normal organs equal to those masses between the faucial pillars. The only reason perhaps that can be given for the physiological dignity to which the faucial masses have attained, is that they are so much more prone to become the seat of diseased action, and were open to direct ocular inspection in this diseased condition centuries before the others were recognized.

What the function of the lymphatics in the economy may be I do not intend to discuss. It has always seemed to me, however, from a clinical point of view that, considering the universality of their distribution, they were situated throughout the system for the pur-

pose of arresting or retarding the encroachment of disease germs, thus acting, as it were, as a sort of police force; and considering, in the light of modern bacteriology, what enormous duties are imposed upon these little bodies, it seems easy to understand how much they are liable to suffer in the encounter; and especially is this true of those bodies between the faucial pillars, lying as they do in the sort of eddy which is established by these two muscular folds.

Whether this is the immediate cause of lymphatic hypertrophy I will not discuss, but the almost universality of a certain amount of lymphatic hypertrophy in some part of the body at every age is recognized by us all. That it should so frequently take the special form that it does in the faucial tonsil, viz., in forming deep lacunæ, I should regard to a certain degree as adventitious; but these crypts are by no means constant, as you know, even in hypertrophy of the tonsils. When they exist we have an organ which lends itself admirably to what constitutes one of its principal activities, that is, as a trap for disease germs. It is difficult to understand why nature should place these sponge-like bodies in a normal throat. I think a far better and clearer understanding of clinical indications would be to regard this mass with its lacunar traps as a diseased body, for in support of this view it is not necessary to recount the very large number of infectious diseases which result from the mechanical entrapping of the disease germ in this sponge-like body. I think this teaching is notably emphasized by the numberless observations published in the last few years of the different germs found lodged in these filthy lacunæ.

Some twenty years ago, at a meeting in London, I made the observation in debate that practically there are no tonsils in a healthy throat. This observation was received with contemptuous jeers. After twenty years of additional clinical observation I am disposed to repeat the same remark before the members of this society with a certain amount of curiosity as to how it may be received here. I do not wish to make the observation with absolute positiveness, and yet I repeat it seems to me that if this view were more generally accepted it would make clearer the clinical indications in the treatment of many cases of throat disease. It would remove many supposed objections to operating upon the tonsils; and, moreover, if such a thing were impressed upon the laity, we would meet with fewer objections to operations for extirpation of

tonsils which are absolutely indicated by every clinical symptom. We so often meet with objections on the part of our patients: "The Lord put them there, and why should we remove them." I usually respond as the only answer to this: "The Lord never put them there, he had nothing to do with the matter; it is a diseased process which practically constitutes a morbid growth or tumor, and should be thoroughly removed, in the same manner as any other tumor, whether it be fibroid or malignant." We often hear as an objection to operating instances quoted of tonsils having been removed, and the throat left in a worse condition than before. I have met with many cases of this sort, and in all of them the subsequent symptoms were either due to some other cause, or the morbid tissue had been only partially removed. This question of thorough extirpation, I might say here (somewhat parenthetically) is one on which much emphasis should be laid, for I think it is a matter within the observation of all of us that a partial extirpation of a tonsil occasionally leaves the throat in as bad, if not in a worse, condition than before operation. Moreover, I am disposed to think that there is no other diseased condition met with in the fauces which gives rise to morbid symptoms in so large a proportion of cases as hypertrophy of these lymphatic bodies between the faucial pillars.

I think we have therefore some justice for advocating the view that the almond-shaped organ in the fauces, which the old anatomists called the tonsil, has not justified its claim to be considered one of the normal organs of the body, either on anatomical, physiological, or clinical grounds. I think that we may go still further, and say that it constitutes a distinct menace to the health and welfare of the body in the filthy lacunæ which make up its main bulk.

If it is a natural growth, rather than the result of a diseased process, then it seems to me that nature had been guilty of a crudeness of design which shows no analogy in the human economy, unless it be possibly in the vermiform appendix—*Medical Record*.

HUMAN DEVELOPMENT.—Prof. Henry L. Brunor, head of the biological department of Butler University, Indiana, makes, says the *Philadelphia Medical Journal*, a startling prediction as to human development. He sees in the future man a being in whom strange transformations shall have taken place; a being in whom brain is master, ruling a body much larger than that of the present man; a body which has lost its floating ribs, its vermiform appendix, and its little toes, and in which many other changes have taken place. He believes the chest and upper and lower limbs will be larger, and that the future man will be much taller than his prototype of to-day.

Letters.

THE BOSS IS BETRAYED IN THE HOUSE OF HIS FRIENDS.

(AS TOLD BY THE OFFICE BOY.)

One Day me an' the Boss was in the Dental Depot an' in come Dock Puffy, Dock Measly, Dock Hotty, an' Dock Timrus, what's President of the Odontologicostomatitital Society. They all got to talkin' about some new Surgical Operation invented by a dentist out in Omaha, er somewhere. It was somethin' to make Artificial Plates stick better. I listened, an' as near as I could Make Out it was somethin' like this—the man what invented the new way, he said he'd noticed the main reason why plates wouldn't stick, was because they wasn't usually a very good Alveolar Ridge. So then his Scheme was to cut a deep Groove around where the Ridge had orter be, an' tuck in a Chicken Wish-Bone, an' let it grow tight. Then you take a Impression an' go ahead. The inventor's name was Dock Hiflutner, an' he was a M.D. as well as a D.D.S.

I seen right away that the discovery was makin' a Great Stir among the dentists. In Fact the dental journals that the Boss borried from Dock Measly that week was both full of it. So I wasn't a bit supprised when I heered that the Society had app'inted three members to go as a delegation to Omaha an' see Dock Hiflutner, an' learn exactly how he Done it, an' how he happened to think of such a Thing, an' all about it. Then they put Dock Puffy an' Dock Hotty an' Dock Measley on the Committee, an' they went off the Next Mornin', only Dock Puffy he Backed Out, when he heered Dock Measly was a-goin' so they put Dock Peabody in his Place.

In a few days the Committee come back, full of Enthusiasm an' Stuff, praisin' Dock Hiflutner to the Skies. Dock Hotty described him as a gentleman havin' a Eagle Eye, an' his Chist a-stickin' out so the Top Buttons of his vest was Busted Off. He said he had the Ear-Marks of a Born Scientist, a man what once havin' got a Notion in his Head, would hold on to it Onflinchin', ef the Universe was to Ixplode. People from all over was Flockin' In to see him, an' git their Teeth Examined Free. He was so Offul Busy that he'd had to start a Inkubator.

The Excitement got so Strong presently, that it was decided to call a Special Meetin' of the Odontologicostomatitital Society at once, in order to consider what the perfession throughout the World had orter do, seein' as the Discovery was bound to overturn an' revolutionize all previous existin' Notions about Dental Surgery. The Boss he was about as Enthusiastic as the Rest, although I suspicioned he was feelin' a trifle Sore 'cause he hadn't been named on the Committee. But he kep' right along in the Procession with the others fer quite a Spell. Then one day he found out he'd been Mistaken, all the While; he'd thought it was some sort o' Practical Dinkey to go inside the Plate an' hold it up. When he found out it wasn't that, he begun to Weaken. Before long he got Sarcastic, an' talked Funny about the discovery, rediculin' Dock Hiflutner out an' out. Dock Puffy an' Dock Hotty, an' in fact several of the Society members they Sneered at the Boss, an' Dock Puffy he warned him he'd better Keep Still, without he wanted to git himself Turned Out o' the Society. Then the Boss he got reel Defiant, an' he told Dock Puffy an' the rest that they be Dam, an' he was a-goin' to say what he believed, an' ef they didn't like it they could Lump It. He said Dock Hiflutner wasn't nothin' but a Blather-Mouthed Fraud, an' he'd write him a letter an' tell him so, first thing they Knowed. (The Boss he's kind o' Mild an' Non-Resistin' ordinarily, but you git him Stirred Up an' he'll Bust Right Out with what he thinks whether or no.)

Well, he went on gittin' madder an' madder, seein' the others all Smilin', an' directly his bein' so Offul Mad seemed to have a mos' curious effect on Dock Puffy. Says he to the Boss, "Blame it all, Dock, I'm a man of Lib'ral Notions, an' I like a man to Stand Up to his Convictions, even ef I don't agree with him. Now you do this, you git up in the Society Meetin' an' you Blaze Right Out what you think o' this, an' I'll agree to stand by you. It'll Make a Mighty Hot an' Interestin' Discussion." So then him an' Dock Hotty kind o' Whispered together Slyly, an' Dock Hotty he said he thought that was a Capital Idee. He said the Society needed a good Stirrin' Up, an' the Boss was the very man to do it, an' he'd stand by him too, ef he'd do it. I noticed he kind o' Hunched Dock Peabody, settin' nex' to him, on the Sly, an' I reckoned somethin' was Up, though what it was I couldn't Imagine.

When the Night of the Called Meetin' come, I went along to

manage the Magic Lantern for Dock Hotty. He was goin' to Exhibit some Slides, showin' how the Wish-bones grewed Tight. They was a Big Crowd o' Folks present, includin' about twenty dentists that wasn't members of the Society, not to mention nearly a Hundred dental students, an' several Doctors. Dock Timrus, the President, was in the Chair. He looked round the Room like he was Skeered to Death, an' d'rectly he hit the Table with his Little Mallet, or Gravel, (what you call it), an he Called Out in a Feeble Vois, "Come to"—like somebody had Fainted. Nobody didn't Pay no Attention, what with Talkin' an' Laughin' so he pounded agin, Reel Hard, an' looked round Bold an' Courageous, like he wasn't a-goin' to be Afeard, no matter what Happened. Says he, "Gentlemen, the Hour has Arrove, fer comin' to—that is, I should say—er—we have met this Evenin' to—to—consider Wish-Bones—I mean—"

Dock Timrus he pounded agin Offul Hard with the Mallet, like it was somebody a-talkin' had throwed him All Out. So then Dock Puffy he Jumped Up an' announced the Object of the Meetin', Dock Timrus seemin' to have sich a offul Stage Frite, so you could n't tell whether he was a-tryin' to announce a Weddin' er the openin' of the Base-ball season. Then when Dock Puffy had Set Down everybody set silent, lookin' like it was a Offul Solemn Subject before the House, an' it had n't orter be approached too Familiar. I could see the Boss he was Waitin' fer Dock Puffy er Dock Hotty to Lead Off with sayin' they Suspicioned Dock Hiflutner was a Humbug, then he'd Sail In an' give him Fits himself. The Boss he was a-settin' right between them two, an' he'd kind o' hunch Dock Puffy, an' then he'd hunch Dock Hotty, but they neither one o' them had anythin' to say. It seemed to me they acted Offul Dumb.

After a Long Pause Dock Peabody he Got Up. He moved that a Vote of Thanks be got up fer Dock Hiflutner, an' that they be spread on the Minutes an' over the Discoverer of the New Invention. That brought Dock Hotty to his Feet. He said it was a Premature Motion, an' they'd orter discuss the question of this Discovery a Spell, first. So then he Set Down, an' dead silence Rained, the members settin' there lookin' Dismal, like it was a Prayer Meetin' an' everybody wishin' the Clock would strike Nine. After a Long Spell o' waitin' the Chairman he ast Dock Hotty would he

open the Discussion. But Dock he shook his Head, only murmurin' somethin' about preferrin' to heer from Dock Puffy. Then the Chairman he ast Dock Puffy would he say some Remarks, an' Dock Puffy he kind o' Shied Off, without givin' him no Satisfaction. They was another long Spell o' waitin'.

Finally Dock Puthoff, what gin'rally waits till everybody else has Spoke, got up. He said to his Thinkin' this was the Mos' Important discovery in the Annuals of Dental Science. The mos' Important in fact, in the Annuals of any Science. The Medical Perfession would jis' about haf to Throw Up the Sponge now; all that had ever been accomplished in Medical Colleges was n't nothin' to this. This seemed to Settle one thing: the Medical student, to keep up with the Procession, would haf to take a Course in Dentistry hereafter.

After he Set Down it seemed like Nobody wouldn't Talk. Dock Puffy he kep' a-lookin' at the Boss, like he wondered why he didn't Git Up. So did Dock Hotty. So at last the Boss he got up, sure enough. An' the Way he Sailed Into that Dock Hiflutner was a Caution. He said the Report o' the Committee strangely enough hadn't been called for by the Chairman, but that didn't reely matter. He knowed all about what had been seen an' learned by the Committee, an' he was prepared to say that fer Unadulterated Gall, Pre-sumption, Humbuggery, this Dock Hiflutner took the Cake an' all the Fancy Dress Suits an' Wall Decorations of the Cake-Walk. Anybody with even a Elementary Knowledge of Histology orter see at a Glance that you couldn't make a Wish-Bone grow in a Human Jaw. In the first place it hadn't no Root. Now ef it had been a Cancer er a Bunion he'd implanted, they might possibly be some sense in it all. Furthermore, this Dock Hiflutner was proposing Ruthlessly to deprive the millions o' Innocent Children throughout the Land of the pleasure an' satisfaction o' breakin' Wish-Bones, an' makin' Wishes. It was Cruel, Inhuman, Out-rageous. An' there was Serious Objections to the Whole Scheme. In the first place, insertin' Wish-Bones in Garrulous Old Peoples jaws, was liable to make them Cackle wuss than ever. An' anyhow, Wish-Bones was n't the Best Thing, Whale Bone had orter do still better, ef they was anything in the Scheme—which they wasn't.

In conclusion the Boss said he'd got a Scheme of his own to make plates Stick. It was to cultivate four or five Abscesses about the

teeth, an' train 'em so as they'd form Fistulous Openings in the roof of the Mouth, little Suck-Holes, so to Speak. He said ef the Society would appoint a Evenin' for the Purpose, he'd like to show how these little Suck-Holes would hold up a Plate.

After he'd Set Down Dock Puffy, who'd been listenin' with a kind o' Sardine-ic Grin on his Face, riz up. He Opened Up in a mild, soft tone of Vois, but as he went On you could easy see he wasn't no Archangel come down from Heaven to bear the Boss away to Supernal Bowers. Before long he Lit Into the Boss, Might an' Main. He said he hadn't the First Instincts of a Original Scientific Investigator, an' it was a Disgrace to set an' listen to a man Swayed by Prejudice like he was. He said they was plenty o' Narrer Souls in the Perfession jis' like him. He said they wasn't no Sense nor Reason in the Boss's suggestion about substitutin' a Whale-Bone fer the Wish-Bone. He called attention to the fact that the Speaker had utterly failed to observe the astuteness of the Scientist he had Criticized, in choosing a Wish-Bone, a bone from a biped, an' therefore in Harmony with the Human Economy. Only a man Utterly Ignornt of Scientific Principles would Make sech a Brake as that. He hoped Dock Contour would go home an' set up the rest of the Night, an' see ef he couldn't somehow put a Crimp in himself, an' learn himself some Sense.

After Dock Puffy set down, Dock Hotty he took a Whack at the Boss, an' then Dock Peabody he got up an' he called him Names, an' the Boss he was Struck Blind with Surprise, an' he couldn't even Gasp fer Breth. I had to pound him on the Back. Things got Wuss an' Wuss, presently; all the Members, young an' old, pilin' onto him. Even some o' the Dental Students made Speeches Impidint an' Insultin', sayin' they'd Heered he wasn't only a Quack, anyhow. Finally Dock Timrus he called the Vice-President to the Chair, an' he made the speech of his Life, blastin' the Boss from A to Z. But the Fiercest Attack of all was made by Dock Somebody er Other, a Stranger, who'd been Introduced as Dean of a Brooklyn Dental College. He jis' Skinned the Boss alive, sayin' that sech men was the mos' Pestiferous Obstacle to a Perfect Union between the Medical an' the Dental Perfessions, henderin' Scientific Progress, buttin' agin Investigation in all its Phases, an' a lot More.

I had to lead the Boss out an' git him in a Cab, to take him

Home, after they' Adjourned the Meetin', he was so Overcome. He was abed Two Days, an' the Doctor said he'd had a Narrer Escape from Nervous Prostitution. He was Offul Mad at the Society, an' when he got so he could hold a Pen, he Writ his Resignation. But they never took no Action, an' he couldn't Find Out whether it was accepted or not. He wouldn't speak to none of the Members for Weeks. Then one day Dock Puffy he passed by, an' the Boss Tackled him at the Door. Says he, "You're a Nice Friend an' Champeen of a feller Society Member in Distress, *you are!*" Dock Puffy he seemed Took Aback, so says he, "What's the Matter?" Says the Boss, "You'd orter ast that Question! Look at the Way you served me, Jumpin' all over me in the Meetin' after you'd said you'd Stand By me! You an' Dock Hotty too!" Dock Puffy he give a kind o' Little Quirk, an' says he, "Well, didn't me an' Hotty both of us Stand by you? We wasn't neither one of us more'n Five Feet from you any time durin' the Discussion. Want a Feller to stand on your Foot?" The Boss he said somethin' about that bein' a Medium Poor joke, an' went in the House.

That afternoon Dock Measley he Give It away to me, that the whole Cocking-Main was a Set-Up Job. Dock Puffy, Dock Hotty an' himself, had hatched out a Conspiracy to lead the Boss on, an' they'd invited everybody to the Meetin' to help Lambast him an' enjoy the Fun. He said the Dean of the Brooklyn Dental College, what give the Boss the Red-Hotttest Roast, wasn't only a Auctioneer what sells Snide Watches an' Joolry, an' he himself had Writ his Speech fer him, an' some o' the Dentists made up Five Dolers to pay him fer Firin' it Off. But when Dock Measley he Told the Boss, he wouldn't listen to no explanations, an' they couldn't git him to come to the Society, till they'd offered him a resolution of Apology, an' had sent Dock Hiflutner a Nother Resolution givin' him Blazes.

Cincinnati, O.

FRANK W. SAGE, D.D.S.

IRRITABLE THROATS.—Patients who gag under the touch of even a wire tongue-depressor may be made to open their throats by looking at themselves in a hand-glass, when the physician can simultaneously obtain an unobstructed view.—*N. Y. Lancet.*

ESSENTIAL OIL that forms the base of all perfumes is a powerful antiseptic, and possesses disinfecting properties equal to those of carbolic acid. A perfumed handkerchief, therefore, may not only please the sense of smell, but prove a guard against infection.—*Lancet.*

The Dental Digest.

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Editorial.

BLINDED BY CONCEIT.

In the June *Items of Interest* appears this editorial squib: "The editor of the DIGEST apparently has devoted so much of his time fighting patents that he has overlooked the copyright laws entirely. In the March number of the DIGEST, among the "Original Communications," appears an article entitled "Tin—A Plea for More Conservative Methods in Filling Teeth," by Dr. T. D. Shumway, Plymouth, Mass. This paper was first published in *Items of Interest*, and was copyrighted. The DIGEST has not only republished the matter, but has done the author the injustice of omitting the copyright claim."

The facts in the case are as follows: Dr. Shumway first read his article before the Harvard Odontological Society, Dec. 27, 1900, and it was first published in the July, 1901, issue of the *International*. When reading it before the Harvard O. S. Dr. Shumway reserved the right to present it to the Vermont State Dental Society at its coming meeting, and he therefore read it before that body March 21, 1901. The Society voted its papers to the DIGEST for publication, with the provision that we were to furnish copies to the *Items*. It was some time before the secretary turned over the papers to us, and a still further delay was caused by the failure of some essayists to forward their papers, but when they were finally all in hand we took copies and sent the originals to the editor of the *Items*, as per the request of the Society. Under date of November 7, 1901, Dr. Ottolengui wrote: "I have retained Dr. Shumway's paper, the others not being available for publication in *Items of Interest*. They are therefore returned to you."

Dr. Ottolengui now states that Dr. Shumway's article "was first published in *Items of Interest*." The facts are that it was published in the March, 1902, number of the *Items* and in the March, 1902, issue of the DIGEST, and instead of this journal having

"republished the matter," it was through our courtesy that Dr. Ottolengui received the original of the article before it was published in the *DIGEST*.

In responding to a toast at the annual banquet of the Central Dental Association of Northern New Jersey last February, Dr. Ottolengui said: "I think the only journal of any consequence whose editor is not a professor is *Items of Interest*." We cannot believe that Dr. Ottolengui wilfully or maliciously misstated the facts about Dr. Shumway's paper, but in view of the above remarks it is plain that he has become so blinded by conceit that he imagines the dental world revolves around him and his journal. In all kindness we would recommend to him a careful reading of *Æsop's fable*—"The Frog and the Ox."

NATIONAL DENTAL ASSOCIATION.

The annual meeting of the National Dental Association will be held at Niagara Falls the last four days in July. Many matters of importance will be discussed, proposed amendments to the constitution and by-laws and to the rules governing the sections will be acted upon, and a change in the date of meeting will be considered.

It is to be hoped that some time can be decided upon which will be satisfactory to all concerned, as this changing the date each year by a postal card vote is childish and creates much dissatisfaction. Generally those who are most anxious to change the time of meeting do not attend, and this year those for whom the change was made have so arranged their plans that it will be impossible for them to be present.

All this is outside of the literary reports, papers and discussions, which are of great value and interest. Another matter quite as important as any that we have mentioned should be brought up, namely, some plan whereby a closer bond of union between the National and the state and local societies can be secured. The dental is far behind the medical profession in this respect, and we could well pattern after the excellent plans and improvements recently made by the American Medical Association, which now draws recruits from all over the United States. Every reputable dental school should send delegates, and every dentist interested in the welfare and progress of his profession should attend. Not only will he be fulfilling his duty, but he will derive much benefit from

the meeting. The sessions held at Niagara Falls are always the largest, and the attendance this year bids fair to surpass that of previous meetings. We earnestly urge our readers to make their plans now to attend.

A BIG COMPANY IN SMALL BUSINESS.

For several years past the *Dental Cosmos* has been the official organ of the National Dental Association, publishing its papers and proceedings and those of the Southern Branch. Last year the publishers thought the *Cosmos* was again to be favored, so they reported the proceedings of the Southern Branch which met at Nashville in July. However, when the National met at Milwaukee in August, it decided to give the proceedings to the DIGEST for publication, and make that journal its official organ, hoping that in this way the proceedings could be gotten out in less than one year after the meeting, which had not been the case previously. According to the constitution and by-laws, each branch must furnish a copy of its proceedings, papers and discussions for publication with the transactions of the National Association. The *Cosmos* therefore could not use the report which it had made, but was in duty bound to turn it back to the Southern branch, to be forwarded to the secretary of the National. The DIGEST was under no obligation whatever to pay the expense of this report, but wishing to be perfectly fair in the matter we sent the S. S. White Co. a check for \$100, which amount they stated they had spent on the work. In the February and April, 1902, issues of the *Cosmos* the papers and proceedings of the Southern Branch appeared almost verbatim and nearly as complete as in this journal, the publishers evidently having kept a copy of the matter which they turned over to us and for which we paid them. Not a line of credit was given to the DIGEST, and the matter was published in the same department as other societies to whose proceedings the *Cosmos* is entitled, the obvious intent being to make it appear that the *Cosmos* was still the official organ of the Southern Branch. Comment is unnecessary.

A. C. PROBERT IN A NEW ROLE.

In the October, 1901, DIGEST we published the questionable literature sent out by A. C. Probert, President of the so-called hospital at Niles City, Mich., and called attention to the probable fraudulent

character of the proposition and of the institution. As Probert continued to do business, we published in the April, 1902, DIGEST evidence to prove that he was an ex-convict, having served a term for embezzlement in the state prison at Waupun, Wis. After this exposure we did not suppose he would have the effrontery to ever show himself in a public capacity, but it is reported on good authority that he has filed articles of incorporation at Springfield, Ill., and has obtained a charter authorizing him to conduct a postgraduate dental school. Prominent men of Chicago have been approached by him and his agents and invited to join the faculty of the new venture. Owing to his past record and character the DIGEST does not suppose any reputable practitioners will join with him, but for fear that some may not be aware of all the facts in the case we again call attention to this individual. It will be remembered that Probert published the names of several prominent dentists as being on the faculty of his snide hospital at Niles, and despite the fact that these men published disclaimers and protested vehemently against the use of their names, he continued in so doing. Consequently, we would warn any dentist who values his reputation against coming in too close contact with this ex-convict.

Notices.

ILLINOIS BOARD OF DENTAL EXAMINERS.

A meeting of the Illinois State Board of Dental Examiners will be held at the office of J. G. Reid, Secy., 1006 Champlain, Bldg., State and Madison streets, Chicago, July 8, 1902, at 9 a. m. J. G. REID, D.D.S., Sec'y.

DELAWARE STATE DENTAL SOCIETY.

At the annual meeting of the Delaware State Dental Society, held June 10-11, 1902, the following officers were elected for the ensuing year: Pres., C. R. Jefferis; V.-P., C. J. Kinkead; Sec'y, R. H. Jones; Treas., S. H. Johns; Librarian, Ed. Lewis.

WASHINGTON STATE DENTAL SOCIETY.

The annual meeting of the Washington State Dental Society was held at Tacoma, May 22-24, 1902, and the following officers were elected: Pres., F. R. Fisk; 1st V.-P., N. G. Covey; 2d V.-P., R. S. Williams; Secy., A. B. Bailey; Treas., W. M. King.

NEW YORK STATE DENTAL SOCIETY.

The New York State Dental Society held its annual meeting at Albany, May 14-16, 1902, and elected the following officers: Pres., R. H. Hofheinz;

V.-P., W. T. Turner; Secy., W. A. White; Treas., C. W. Stainton; Correspondent, H. D. Hatch. The next meeting will be held in Albany, May, 1903.

MICHIGAN STATE DENTAL ASSOCIATION.

The annual meeting of the Michigan State Dental Association was held at Grand Rapids, June 9-11, 1902, and the following officers were elected for the ensuing year: Pres., E. A. Honey; V.-P., C. C. Noble; Secy., F. H. Essig; Treas., J. Ward House.

KENTUCKY STATE DENTAL ASSOCIATION.

The Kentucky State Dental Association held its annual meeting at Covington May 19-21, 1902, and elected the following officers: Pres. J. S. Cassidy; V.-P., J. F. Clark; Sec'y, F. I. Gardner; Treas., F. R. Wilder. The next meeting will be held in Louisville, May, 1903.

CONNECTICUT STATE DENTAL ASSOCIATION.

At the annual meeting of this Association, held at Hartford, May 19-21, 1902, the following officers were elected: Pres., Ed. Eberle; V.-P., T. W. Johnston; Sec'y, F. Hindsly; Asst. Sec'y, C. P. Prentice. Treas., E. B. Griffith; Ex. Com., G. O. McLean, E. B. Abbey, J. E. Heike; Librarian, W. H. Metcalf; Editor, J. W. Harper.

CALIFORNIA STATE DENTAL ASSOCIATION.

At the annual meeting of the California State Dental Association, held at San Francisco, June 10-12, 1902, the following officers were elected for the ensuing year: Pres., Frank L. Platt; 1st V.-P., L. Van Orden; 2d V.-P., W. J. Taylor; 3d V.-P., W. G. Knowles; Rec. Sec'y, C. E. Post; Cor. Sec'y, O. P. Roller; Treas., T. N. Iglehart.

SOUTH CAROLINA STATE DENTAL ASSOCIATION.

The annual meeting of the South Carolina State Dental Association was held at Charleston, May 14-16, 1902, and the following officers were elected: Pres., A. T. Pete; 1st V.-P., T. Dotterer; 2d V.-P., D. Aiken; Treas., T. W. Dix; Cor. Secy., I. M. Heir; Rec. Secy., G. A. Smith. The next meeting will be held at White Lithia Springs.

ALABAMA STATE DENTAL ASSOCIATION.

The Alabama State Dental Association met at Tuscaloosa, May 14-16, 1902, and elected the following officers for the ensuing year: Pres., W. E. Proctor; 1st V.-P., H. C. Hassell; 2d V.-P., N. N. Vann; Sec'y, J. T. Cook; Treas., W. D. Fulton; Member Ex. Com., J. C. Wilkerson; Mem. Ex. Board, J. A. Allen; Press Editor, T. M. Allen.

NEBRASKA STATE DENTAL SOCIETY.

The annual meeting of the Nebraska State Dental Society was held at Lincoln, May 20-22, 1902, and the following officers were elected: Pres., H. J.

Cole; V.-P., H. A. Shannon; Rec. Secy., W. R. Clark; Cor. Secy., H. H. York; Mem. Board of Censors, B. L. Spellman. The next meeting will be held the third week in May, 1903, at Lincoln.

GEORGIA STATE DENTAL ASSOCIATION.

The thirty-fourth annual meeting of the Georgia State Dental Association was held at Macon, June 10-12, 1902, and the following officers were elected for the ensuing year: Pres., J. M. Mason; 1st V.-P., Sam. Rambo; 2d V.-P., E. A. Tignor; Rec. Sec'y, S. H. McKee; Cor. Sec'y, O. H. McDonald; Treas., H. A. Lawrence. The next meeting will be held at Tallulah, June 10, 1903.

TEXAS STATE DENTAL ASSOCIATION.

The annual meeting of the Texas State Dental Association was held at Waco, May 13-15, 1902, and the following officers were elected: Pres., J. G. Fife; 1st V.-P., T. P. Williams; 2d V.-P., R. D. Griffis; Secy. and Treas., Bush Jones; Curator of Museum, A. F. Sontag; Ex. Com., W. R. Rathbone, A. J. Beville, C. O. Webb. The next meeting will be held at Houston in May, 1903.

LATEST DENTAL PATENTS.

- 700,855. Mold for casting plates, W. Streetman, Cleburne, Tex.
- 701,616. Crown-slitting forceps, C. J. Reynolds, Pittsburg.
- 701,627. Dental electromotor switch, E. Schreier, H. Dumler, Vienna, Aus.
- 701,799. Dental matrix, W. Crenshaw, Atlanta, Ga.
- 702,073. Dental electric switch, E. O. Pieper, San Jose, Cal.
- 702,276. Flask-locking device, D. A. Baker, Schenectady, N. Y.

MASSACHUSETTS STATE DENTAL SOCIETY.

The thirty-eighth annual meeting of the Massachusetts State Dental Society was held at Boston June 4-6, 1902, and the following officers were elected: Pres., A. J. Flanagan; 1st V.-P., Wm. P. Cooke; 2d V.-P., B. H. Strout; Secy., E. O. Kinsman; Treas., J. T. Paul; Librarian, T. W. Clements; Editor, W. E. Boardman; Ex. Com., J. F. Dowsley, Chairman; A. J. Flanagan, W. P. Cooke, W. E. Boardman, D. H. Allis, J. R. Piper, J. F. McLaughlin.

NATIONAL DENTAL ASSOCIATION.

The sixth annual meeting will be held at Niagara Falls, N. Y., July 28-31, 1903. A good program is being prepared, and a large and profitable meeting is anticipated. A rate of a fare and third for the round trip, on the certificate plan, has been secured on all roads in the United States and part of Canada. Certificate must be taken and full fare paid when purchasing ticket going, and this certificate when properly signed entitles the holder to return for one third fare. Tickets may be bought going from July 22-29, and the certificates for return may be used as late as Aug. 4.

A. H. PECK, Rec. Sec'y., Chicago.

MISSOURI STATE DENTAL ASSOCIATION.

At the annual meeting of this Association, held at Jefferson City, May 21-23, 1902, the following officers were elected: Pres., S. C. A. Rubey; 1st V.-P., J. H. Kennerly; 2d V.-P., F. W. Franklin; Cor. Secy., Otto J. Fruth; Rec. Secy., H. H. Sullivan; Treas., J. T. Fry; Board of Censors, A. M. Magee, R. J. Winne, W. M. Bartlett; Com. on Ethics, A. J. Prosser, W. H. Renoe, J. B. McBride; Publication Com., Wm. Conrad, W. G. Goodrich; Com. on History, B. L. Thorpe; Com. on New Appliances, S. T. Bassett; Com. on International Dental Congress During Louisiana Purchase Exposition, W. M. Bartlett, Wm. Conrad, F. F. Fletcher, M. C. Marshall, L. G. McKellops, H. Prinz, B. L. Thorpe. The next annual meeting will be held at Kansas City.

OTTO J. FRUTH, Cor. Sec'y.

RESOLUTIONS ON THE DEATH OF DR. EBI.

The Cedar Rapids Dental Society passed the following resolutions on the death of its honored member and ex-president, Dr. Edward Ebi.

WHEREAS, In the death of our friend and fellow practitioner, Dr. Ebi, this society has sustained the loss of a beloved member, who by his dignity and counsels added much to the profit and interest of its meeting, and who as its president for two terms did all in his power to promote the welfare and high professional standing of its members, and

WHEREAS, We each feel the loss of a true personal friend whose kindly smiles and deep experience did much to cheer and encourage, and

WHEREAS, We believe that the welfare of humanity through his professional attainments was ever his aim and ideal, and his every act was never to bring discredit upon his profession, therefore be it

Resolved, That we pay such tribute to his memory as possible. That we extend our sympathy to the relatives and friends who also have suffered loss, and further be it

Resolved, That a copy of these resolutions be sent to his relatives, and that they be given to the local papers and professional journals for publication, and that they be placed upon the records of this society.

L. E. RICHADSON,
C. B. WHELPLEY,
GUSTAVUS NORTH,

Committee.

FIRST ANNUAL CLINIC OF SCHOOL OF DENTISTRY, UNIVERSITY OF ILLINOIS.

Held at the College building, 813 West Harrison street, Chicago, Wednesday, March 26, 1902. (Reported by Drs. F. W. and R. W. Parker.) This was one of the most successful clinical meetings ever held in the city. About seven hundred names were enrolled on the college register. Luncheon was served in the College building to all present. In the evening the College gave a theatre party to the clinicians and specially invited guests.

Clinic No. 1. Dr. L. P. Haskell of Chicago exhibited a number of models of difficult cases in the construction of artificial dentures, giving suggestions

as how to overcome the difficulties which arise in the construction of such dentures. Dr. Haskell also demonstrated the making and baking of a continuous gum case, using the Hammond Drop Furnace.

No. 2. Dr. J. H. Woolley of Chicago filled occluso-proximal cavity in upper bicuspid by covering gingival wall and margin with non-cohesive gold, then filling cavity with cement. This method is held by the clinician to be superior to others, as the gold is not dissolved and the gingival portion of the cavity is protected and preserved.

No. 3. Dr. L. W. Nevius of Chicago administered nitrous oxid gas to several patients and skillfully extracted a number of teeth.

No. 4. Dr. F. M. Richardson of Chicago, administered nitrous acid gas, using the Hurd inhaler, by which the operator is enabled to prolong the anesthesia, and more time is afforded for the work. Dr. Richardson operated on a number of patients very successfully.

No. 5. Dr. A. O. Hunt of Chicago demonstrated the Griswold and Brewster methods of crowning.

No. 6. Dr. L. O. Green of Chicago used local anesthetic ("Acestoria") and extracted teeth quite painlessly for a number of patients.

No. 7. Dr. W. A. Stevens of Chicago demonstrated a method of removing one or more teeth from a vulcanite plate without any distortion of the denture, or checking of any surrounding teeth or of the teeth to be removed. The method is to apply to the teeth to be removed a coating of sperm or other oil. Then hold tooth to be removed directly over a small pointed flame. As soon as tooth is thoroughly heated it may be removed without difficulty. This was a very good demonstration of a practical point.

No. 8. Dr. R. N. Laurance of Lincoln, Ill., treated pyorrhea cases, using Younger instruments and others designed by the clinician himself. Glycethymoline was used as antiseptic during the treatment and recommended as a mouth wash. Lactic acid was used in the pockets about the necks of the teeth "to seal up wound and give Nature a chance to form scar tissue." The clinician used iodine, aconite, tannic acid and glycerin externally on gums.

No. 9. Dr. F. H. Skinner of Chicago prepared cavity in hypersensitive dentin under nitrous oxid gas administered with Hurd inhaler. The cavity was then filled with tin and gold until the pulpal wall was protected, and finished with platinum and gold folds. This combination of materials is said to conduct thermal changes less readily.

No. 10. Dr. C. E. Bentley of Chicago prepared mesio-lingual cavity in upper left cuspid and burnished therein a platinum matrix in which the clinician baked a porcelain inlay. The fit and color were good.

No. 11. Dr. W. O. Vallette of Goshen, Ind., exhibited a neat sterilizer of his own design in which the instruments are sterilized by boiling.

No. 12. Dr. G. V. I. Brown of Milwaukee showed several cases which he had operated upon at the school previous to the clinic. One of unusual interest was a case of empyema of the antrum of six years standing.

No. 13. Dr. J. W. Erringer of Chicago prepared proximo-occlusal cavity

in upper bicuspid and filled with gold, using Pack's cylinders. The finished filling presented a very nice appearance.

No. 14. Dr. H. H. Schuhmann of Chicago exhibited a porcelain inlay which he had made for a mesial cavity in upper lateral incisor. The inlay was made after the Peck method and was a nice piece of work, both as to fit and color.

No. 15. Dr. H. E. McDonald of Chicago gave a table clinic.

No. 16. Dr. F. E. Roach of Chicago exhibited a porcelain crown without band of his own design, also ingenious soldering pliers for use in soldering crowns.

No. 17. Dr. W. H. Dwight of Le Mars, Iowa, showed a detachable facing of his own design.

No. 18. Dr. C. H. Wambold of Chicago exhibited metal dies and counter-dies and the use of Hawl's moulding flask.

No. 19. Dr. F. C. Bryant of Chicago made a partial lower continuous gum case, using the Hammond Drop Furnace in baking.

No. 20. Dr. H. B. Tileston of Louisville made a gold inlay for disto-occlusal cavity of lower right bicuspid. Cavity was prepared so matrix would draw easily; a bite was taken in modeling compound; impression of the tooth containing cavity was filled with copper amalgam which had been allowed to set over night; bite was run full of plaster and placed on articulator; gold foil was burnished into cavity in the amalgam model of the tooth; then another piece of foil was soldered to the matrix along the line where the matrix covered the gingival margin of the cavity; a small hole was made in the matrix for the entrance of solder. Then matrix was replaced in cavity and reburnished, cavity was filled with pellets of cotton, over which were contoured the pieces of foil which had been soldered to the matrix, care being taken to get the contact point with the adjoining tooth, also to get the foil in contact with the margins of the matrix. Finally, all was removed, cotton burned out and the solder to fill the space inserted, after which inlay was trimmed and set with cement.

No. 21. Dr. C. P. Pruyn of Chicago gave an oral surgery clinic, a case of fracture of the lower jaw of five weeks standing, fracture occurring on right side just anterior to the third molar. There was much swelling and induration, which made the work very difficult. These were materially reduced by the application for thirty minutes of very hot compresses. Then occlusion was established and the teeth held in proper occlusion by means of wire ligatures which bound the lower to the upper ones. Food could be taken in liquid form through a tube introduced into the mouth through space on the right side made by the loss of teeth already extracted. This method of reducing such a fracture seemed adapted to the case.

No. 22. Dr. G. A. Miller of Chicago showed a simple and accurate method of making carved cusps for band crowns. Cusp carved in any manner, allowing for thickness of gold. Made counter-die of fusible metal and swaged with a plunger.

No. 23. Dr. Lester Bryant of Chicago formed and carved eight porcelain

crowns, six bicuspsids, one cuspid and one lateral. Clinician showed much ability in this line, the work being well executed.

No. 24. Dr. S. M. White of Benton Harbor, Mich., demonstrated a method of preparing and filling diseased root-canals.

No. 25. Dr. Edmund Noyes of Chicago prepared a mesio-incisal cavity in upper left central incisor and filled with cohesive gold, finishing the labial surface and incisal portion with platinum and gold. The contour, finish and appearance were all that could be desired.

No. 26. Dr. W. C. Goldbeck of Chicago constructed on plaster models one shell and one open-faced crown, obtaining the measurements for the bands from the models. Contouring pliers alone were used for the work.

No. 27. Dr. A. G. Johnson of Chicago prepared roots for banded crowns, using instruments of his own design for the removal of the enamel.

No. 28. Dr. Chas. N. Reese of Chicago constructed a nine-tooth bridge from upper cuspid to second bicuspid on opposite side. Cuspid an open-faced and bicuspid a shell crown made by Dr. Goldbeck. Dr. Reese backed the facings and soldered bridge, demonstrating a method of his own for backing facings and for placing solder. Clinician used Parr's flux in soldering, dusting case with it while the latter was hot.

No. 29. Dr. G. B. Stone of Chicago constructed porcelain crowns by a new process, baking them with the Turner gasoline furnace and using S. S. White and Brewster High Fusing Porcelains. Fusible metal matrix was made over a metal tooth one-sixth larger than the desired crown, this to allow for shrinkage of porcelain. Body was forced into matrix and excess of moisture taken up by blotter. Matrix containing crown was then melted and crown removed and baked. This is an excellent method and the results were good.

No. 30. Dr. L. Phillips of Chicago presented a method of making a porcelain-faced crown. Cope made in usual manner, labial side of band made very thin; facing backed with pure gold or platinum and waxed in position with cope in place in mouth. Rope of pure gold laid around gingival margin of facing and then investment made and soldering done with 20 or 22 K solder. Then crown polished, the labial side of band being ground very thin.

No. 31. Dr. H. O. Browning of Chicago filled an occlusal cavity in upper right first molar, cutting the cavity to include grooves and pits.

No. 32. Dr. Hart J. Goslee of Chicago exhibited two removable bridges, using the Morgan attachments. The bridges were beautifully constructed and the fit and appearance all that could be desired.

No. 33. Dr. C. N. Trompen of Roseland, Ill., filled a mesio-occlusal cavity in an upper left first bicuspid, using hand pressure. The filling presented a very good appearance when finished, both as to contour and density.

No. 34. Dr. R. C. Brophy of Chicago baked a number of banded porcelain crowns, using a gasoline furnace of his own design. The results were very favorable.

No. 35. Dr. C. W. Miller of Toledo, Iowa, exhibited pliers to be used for contouring bands for crowns, also for shaping the cusps. The pliers have a number of interchangeable beaks and are of clinician's own design.

No. 86. Dr. F. H. B. MacDowell of Racine, Wis., demonstrated a method of using and caring for hypodermic needles.

No. 87. Dr. J. E. Hinkins of Chicago showed a method for the fixation of loose teeth. The teeth were first ligated with continuous ligature, then all was well dried and Kowarski's cement applied to the ligature. When set the cement was trimmed and smoothed.

No. 88. Dr. Don M. Gallie of Chicago. Gold filling in disto-occlusal cavity in upper left first bicuspid. Cavity prepared at a previous sitting. Cavity filled with Pack's gold pellets and finished with No. 80 foil. Filling when finished was excellent. Contour beautiful, contact normal, and restoration of normal interproximate space.

No. 89. Dr. G. V. Black of Chicago demonstrated to good advantage the use of the separator as an aid in finishing a gold filling on the proximate surface, and the use of the finishing files and knives of his own design. These latter instruments are very effective in their work, and once mastered are indispensable.

News Summary.

G. W. ELLINGTON, a dentist at Hempstead, Texas, died May 9, 1902.

D. E. LANE, 59 years old, a dentist of Hartford, Conn., died May 16, 1902.

W. MORRIS, a dentist at Forreston, Ill., died May 10, 1902, of consumption.

E. J. JOHNSON, 76 years old, a dentist at Rockford, Ill., died June 1, 1902.

C. E. CAMPBELL, a young dentist of Monticello, Ga., died June 8, 1902, of appendicitis.

E. A. KINGSBURY, a young dentist of Winona, Minn., was drowned May 23, 1902.

A. E. HORTON, one of the oldest dentists in Fitchburg, Mass., died May 31, 1901.

J. M. CHURCH, a dentist at Ottawa, Can., died June 1, 1902, from accidental poisoning.

W. J. STEPHAN, 29 years old, a dentist of Cleveland, died after a brief illness May 31, 1902.

NO TRIAL TO HIM.—Life is full of trials, but the lawyer confronts them all with the smile of a hero.

O. WHIPPLE, 65 years of age, a dentist at Olean, N. Y., died suddenly May 26, 1902, from heart disease.

LAUGHTER.—It is said that laughter is a cure for indigestion, but a man can't laugh when he has dyspepsia.

H. A. DEWEY, 67 years old, and for over forty years a dentist at Pontiac, Mich., died of paralysis June 1, 1902.

APROPOS.—During a recent convention in Washington a shopkeeper had this placard in his window: "D.A.R. TERS should wear our G. A. R. TERS."

J. T. CHASE, 79 years old, and said to be the oldest practising dentist in Maine, died at Hallowell, May 25, 1902.

DUTY ON HOSPITAL INSTRUMENTS.—By a recent ruling, hospitals will have to pay duty upon medical instruments imported for their use.

BANKRUPT.—J. C. Gulick, a dentist at Brooklyn; liabilities, \$5,172; assets, \$57. A. E. Nichols, a dentist at Honolulu; liabilities, \$20,000; no assets.

BEARDS TABOOED.—The milk commissioner in New York has ordered that hereafter only smooth faced men shall be employed for milking cows and delivering milk.

BETTER WAIT.—Patient—"What would you think of a warm climate for me, doctor?" Physician—"Good Lord, man, that is just what I am trying to save you from."

DENTIST NEEDED.—It is reported that Stockham, Neb., needs a good dentist, and that the citizens of the village are tired of and disgusted with itinerant dental fakirs.

VERSATILE.—Ohio boasts a man who has on his letter-head, "Physician and Surgeon, Dentist and Optician." Pretty hard for any case to get away from that combination.

TAX FOR TRANSIENTS.—Cortland, Tenn., has passed an ordinance, levying a tax of \$25 for each visit upon all transient dentists and fixing a tax of \$5 annually upon resident dentists.

"ILLEGITIMATE" PRACTITIONERS.—A Texas exchange comments upon the large number of *illegitimate* practitioners in that state. O well, paternity is a secondary consideration anyhow.

PAWNEED HIS WIFE'S TEETH.—A drunkard in Chicago this month took his wife's false teeth from her mouth while she was asleep and pawned them for a drink. Pity the whipping-post is not in vogue here.

LEBANON VALLEY (PA.) DENTAL ASSOCIATION last month elected the following officers: Pres., E. Tate; V.-P., W. P. Clark; Rec. Sec'y, H. J. Harbein; Cor. Sec'y, P. K. Filbert; Treas., C. B. Wagner.

JOURNALISM VERSUS HONESTY.—A writer in the *Atlantic Monthly* asks, "Can a newspaper editor be a strictly honest man?" Yes, for a few days. Then some one else will be the editor—if the paper is still alive.

DENTAL NEWS.—We had meant to announce ere this the advent of the *Dental News*, the latest addition to dental journalism. It is published in New York City by the Stowe & Eddy Co. We wish it all success.

BARE ARMS LEGALIZED.—It is useless, says the *Medical Standard*, for physicians to argue against short-sleeved dresses, as the constitution of the United States says: "The right to bear arms shall not be interfered with."

EXPENSIVE EXTRACTION.—A fireman in Louisville has been awarded \$500 damages in a suit which he brought against the captain of the engine-house for knocking out three teeth. The captain could have had the work done with less pain to patient and expense to him by some one licensed to extract teeth.

EL PASO COUNTY (COL.) ODONTOLOGICAL SOCIETY was organized at Colorado Springs May 15, 1902, and the following officers were elected: Pres., W. K. Sinton; V.-P., G. Y. Wilson; Sec'y, T. A. Johnston; Treas., J. A. Smith.

GERMANY APPRECIATES DIGEST.—In the May number of "*Zahnheilkunde*," one of the leading dental journals of Germany, twelve articles were reprinted from American dental journals—seven from the DIGEST and five from other sources.

SUSQUEHANNA (PA.) DENTAL ASSOCIATION elected the following officers May 16, 1902: Pres., C. C. Walker; V.-P., D. B. Williams; Treas., J. C. Hertz; Sec'y, F. W. Thomas; Asst. Sec'y, O. H. Uhler; Cor. Sec'y, W. C. Middaugh.

ANYTHING DENTAL.—The press clipping bureaus which serve the DIGEST are instructed to send us everything relating to dentistry, and we recently received a clipping stating that a butcher in Boston was remodeling his residential property.

NORTHERN OHIO DENTAL ASSOCIATION at its forty-third annual meeting, held at Cleveland, June 9-11, 1902, elected the following officers: Pres., J. F. Stephan; V.-P., W. H. Fowler; Cor. Sec'y, W. T. Jackman; Rec. Sec'y, C. D. Peck; Treas., D. A. Allen.

CORONATION.—"Whither away?" asked the inquisitive man. "To the coronation," answered the hurrying one. "What? Not to England?" exclaimed the interrogator. "Oh no," said the other, as he started off again, "only to my dentist to have a tooth crowned."

LAWRENCE (MASS.) DENTAL CLUB was organized May 26, 1902, and the following officers were elected: Pres., N. B. Russell; V.-P., F. W. Bevington; Sec'y, J. P. Reardon; Treas., W. H. Caffey. Ex. Com., C. W. Partridge, C. A. Kershaw, C. A. Frank. Meetings will be held monthly.

SCHOOL EXAMINATIONS BARRED.—The school board of Maryland this month refused a request made by the Maryland State Dental Association to be permitted to examine the teeth of the pupils in the public schools, and also to give brief talks to the students of the high schools on the care of the teeth.

LARGE MOUTH.—Dr. H. E. Becker, Owensboro, Ky., reports that he has just finished a set of teeth for a negro woman whose mouth is a record breaker, the back teeth having a spread of three and one half inches and the distance from front to back of the mouth being twice that of the ordinary individual.

TEETH SAVE LIFE.—A union picket on duty during the recent labor trouble in Chicago was shot at by a workman whom he was intimidating. The bullet passed through his upper lip and smashed all to pieces an upper set of false teeth which he was wearing, but went no farther and caused no injury except the wound in the lip.

DAMAGE SUITS.—A man at Albany, N. Y., on June 5 brought suit against a dentist to recover the sum of \$2,000 because two sound teeth were pulled. A newspaper man at Oakland, Cal., on May 22 brought suit against a dental

parlor in San Francisco, asking \$10,000 damages for injuries caused by incompetent and careless service.

MICROBIOLOGY.—Teacher, "Tommy, in the sentence, 'A microbe is a minute living organism', parse microbe." Tommy, "Microbe is a common noun, possessive case—Oh, yes it is—first person, microbe; second person, your crobe; third person, his—" and Tommy stayed after school.

FROG IN STOMACH.—A unique operation was performed in New York recently, says the *New York Medical Journal*, when a living frog was removed from the stomach of a woman. It was probably swallowed when a tadpole, and it is believed that it lived in the patient's stomach for five years. Frog lived for several hours after the operation.

LOVING CUP FOR DR. McMANUS.—At the last meeting of the Connecticut State Dental Association, held at Hartford last month, Dr. James McManus of Hartford, one of the founders of the Association and prominent in society work throughout the country, was presented with a loving cup by the members. One was never more deservedly given.

FAKERS VIOLATING LAW.—The Merchants Association of Indiana has filed affidavits in the circuit court against a dental company with headquarters in Fort Wayne. The company has been selling tooth powder throughout the state and giving chances on presents with every purchase, and this method of doing business is alleged to be in violation of the state law.

TAXATION RULING.—An opinion of special interest to dentists has just been rendered by Attorney General Hamlin of Illinois. The question involved is whether office furniture and fixtures of professional men are assessable in the district where they are located, or where the owner resides. The attorney general decides that professional men may be assessed only in place of residence.

ILLEGAL PRACTITIONERS.—June 17 a dentist at Kenosha, Wis., was arrested for practising without a license. May 27 a dentist at Staunton, Va., was arrested for the same offense. The dentist at Vineland, N. J., whom we announced last month had brought suit for damages against the prosecutor of the state dental board for causing his arrest for practising without license, has been convicted.

MYSTERIOUS ORGANIZATION.—According to newspaper report C. A. Sykes, New York representative of C. Ash & Sons, was elected president of the American Dental Trade Association, which closed its annual meeting at Detroit last week. Will some one tell us what the American Dental Trade Association is, as we are unable to find it mentioned in the list of dental societies of the United States, and we are assured it is not the Dental Trust, as there is no such thing.

FIRES.—L. T. Cummins had his office burned out at Hempstead, Tex., June 4. Powell Dental Parlors, at Brooklyn, N. Y., were burned out June 2. A. C. Rich, Saratoga, N. Y., was burned out June 9. H. M. Robbins, Rockland, Me., lost \$400 by fire May 17. E. T. Tillet, Tracy City, Tenn., lost \$800 by fire June 9. U. S. Dental Parlors, New Orleans, La., were burned out

June 1. H. J. Wetmore had his office considerably damaged by smoke and water at Wymore, Neb., during the progress of a fire May 22.

DIED HARD.—“Ah, yes,” sighed the fat lady, “my husband died hard.” “Poor fellow,” said the woman who is always sympathizing with people; “what was the trouble with him?” “I don’t know the scientific name for it. He was the ossified man.”—*Ex.*

CIGAR CLIPPERS CAUSE INFECTION.—The Chicago Board of Health pronounces the mechanical cigar clippers used in cigar stores a menace to health. Usually a smoker wets the ends of his cigar in his mouth before inserting it in the clipping machine, and so leaves whatever pathogenic germs his mouth may convey to infect the next comer. Venereal disease is of course the most serious peril, and undoubtedly many cases of extragenital syphilis have originated in this way. Smokers would better employ the clipper which nature has furnished them.

FATALITIES.—A prominent citizen of Jacksonville, Fla., died May 21, 1902, from blood-poisoning following an operation which was rendered necessary by the fact that he had swallowed his set of false teeth. On May 15, a young woman at Sandusky, O., almost died from the effects of cocaine locally applied for tooth extraction by a dentist. A woman at Little Falls, N. Y., 35 years years old, died under chloroform on June 14, after the extraction of fifteen teeth. A woman died from the administration of gas June 9, in a dental parlor in Chicago. A young man, 25 years old, died at Quebec May 23, from the effects of chloroform given for tooth extraction.

DENTAL COLLEGE COMMENCEMENTS.—Colorado College of Dental Surgery, Denver, Col., May 19, 24 graduates. Detroit College of Medicine, Dental Department, Detroit, Mich., June 12, 40 graduates. Georgetown University, Dental Department, Washington, D. C., May 29, 8 graduates. Medico-Chirurgical College, Dental Department, Philadelphia, May 24, 32 graduates. University of Southern California. College of Dentistry, Los Angeles, Cal., June 12, 18 graduates. University of Minnesota, Dental Department, Minneapolis, Minn., June 5, 30 graduates. Western Dental College, Kansas City, Mo., April 30, 66 graduates. Western Reserve University, Dental Department, Cleveland, O., June 12, 31 graduates.

WHITENING OF HAIR.—After reporting a case in which the hair turned white in four or five weeks in a paranoiac, Jones discusses the condition and gives statistics as to his observations in regard to the color of the hair in patients at the Claybury Asylum, and correlates the different types with different emotional conditions. He found light-haired persons were fond of amusement, while the dark-haired ones took more kindly to religious services. He thinks that whatever explanation is offered for the sudden blanching of the hair, which undoubtedly occasionally occurs, the close physiologic connection between the cerebrospinal axis and the skin, which have a common genealogy, must be borne in mind.—*Lancet.*

FALSE MODESTY. The proprietor of a Spanish newspaper recently received the sum of \$15 from an anonymous subscriber who said he had de-

frauded the paper of that amount, it being the price of over seven years subscription." The pleased editor begs that. "As such conduct ennobles rather than debases, the sender may make himself known in order that he may be praised for the nobility of his act." If any of the subscribers to the *DIGEST* are refraining from settling up old subscription accounts through fear that we would publicly "praise the nobility of the act" if they should remit, we assure them that their names will not be published unless so desired. You can never tell how much latent modesty there is in a man.

COFFEE AFTER DINNER.—It is difficult to give an adequate reason for this practice. One explanation is that coffee tends to neutralize the effect of alcohol which may have been consumed. The practice of taking cheese at the close of a meal is justified on the ground that it aids the secretion of gastric juice and thus favors digestion. This is probably correct, for a morsel of old cheese causes an increased flow both of saliva and of gastric juice. But the coffee question can hardly be solved on a like basis. Instead of favoring digestion, both tea and coffee retard it. Sir William Roberts questions whether this delaying effect on digestion may not after all be a beneficial feature. He argues that the perfection of cooking tends to present us with our food in a condition which favors not merely rapid digestion but too quick assimilation.—*Phila. Med. Jour.*

SUBSCRIBERS APPRECIATIVE.—It is perhaps known to you that we recently sent out bills to all subscribers who were in arrears. The majority paid up and accompanied their remittances with kindly words of commendation. As this issue of the *DIGEST* goes to a large number of men who have perhaps never seen it before, we trust our regular readers will pardon us for reproducing same, as we would like to show how the *DIGEST* is regarded by its subscribers. "We ought all feel under obligation for your persistent efforts in making the *DIGEST* the periodical it is.—Dr. H. L. Gilmour, Philadelphia. Thank you for the many good things I have had through the *DIGEST*.—H. L. Madison, Burlington, Ia.—Simply neglect; *DIGEST* well worth the money. R. W. Hutchinson, New York. Accept our thanks for such a good and wide-awake journal—Hunter & Hunter, Fayetteville, N. C.. It is a privilege to support your excellent journal.—Chas. Southwell, Milwaukee."

ARCHITE CEMENT SOLUBLE.—Dr. Frank L. Platt, editor of the *Pacific Dental Gazette* gave the result of personal experiment with Archite Cement before the March meeting of the San Francisco Dental Association. He said, "A new filling material has recently been given to the profession under the name of Archite Cement, for which unusual claims have been made by its manufacturers, especial attention being called to its *insolubility* in lactic acid and ammonia. Experiments made with the sample of hardened cement received from the manufacturers prove it to be quite soluble in lactic acid, one per cent solution, and sparingly soluble in ammonia solution of the same strength, the ammonia so softening the outer surface of the piece of cement tested that it could be readily scraped off with the finger nail. Good authorities also report the cement to be quite soluble in water. So much for another *insoluble* cement."

MARRIED.—L. G. Albright-Marie Paterson, May 27, Chicago. Carl Blair, Youngstown, O., May 23. R. K. Davis-Janet Osborne, May 12, Allison, Ia. G. T. Earhart-Nona McCormick, May 28, Indianapolis. R. E. Flory-Sarah E. Scott, June 10, Dayton, O. E. G. Gibson-Miss Davey, June 12, Momence, Ill. G. Hinds-Carrie Staats, June 2, Bozeman, Mont. R. A. Morton-Edith Tate, June 4, Shelby, Ia. W. C. McConnell-Mattie Carrick, June 4, Fenton, Mich. A. B. MacEachern-Jennie Hamilton, June 4, Detroit Mich. H. McNeil-Emma Bunnell, May 16, Chicago. L. A. Riley-Louise Mathers, May 24, Seymour, Ind. F. C. Runge, Jr.-Harriet Ruelle, May 19, Houghton, Mich. G. A. Ryder-Mame Rossley, May 8, Lawler, Ia. E. G. Schmidt-Rose Benner, June 4, East St. Louis, Ill. J. A. Stoeckley-Emelyn M. Hinkle, June 18, South Bend, Ind. W. A. Thornton-Irma R. Hobbs, June 11, Marianna, Ark. E. H. Weber-Clara Libenstein, May 14, Lake Mills, Wis.

DENTIST'S QUEER WILL.—There is a queer old traveling dentist in New Mexico who spends his time pulling cowboys' teeth and collecting curios. He is from Michigan and has a strong affection for the University at Ann Arbor, to which he has frequently presented pottery, mummies and relics of the cliff dwellers. He has accumulated a handsome fortune and, being advanced in years, has recently made his will, which he sent to the University. He has bequeathed to the University his entire fortune, his collection of curiosities, and the large tent in which he lives and practices. His only stipulation is that an annual festival in his memory must be held in the tent, at which the leading features of the menu shall be "large cold bottles and small hot birds." The feast is not for the students, but for the faculty and president, and while they would like the curios and the money, they are nonplussed by the annual carousal.

DENTISTRY NOT LIBERAL.—"You pride yourself on being a member of a liberal profession," said a medical man to a dentist friend, "but you are completely off. You see, it's like this: When you do anything you know beforehand just what's going to happen, and it happens just as you had foreseen. Now, with us it's different. When we shoot a pill or blow a powder into a patient we simply don't know—we think—we guess. Of course something happens, but just what don't appear until later—sometimes too later. Therefore your so-called profession is at best an art and you an artist—perhaps merely an artisan; while I, *directly as I don't know*, am a professional man." "Yes, but how about the lawyer and our clerical friends?" "Why inasmuch as their ability to foretell is even inferior to mine, they're that much more professional. The fact is, the more you know the less you have to profess, and this looking wise twenty-four hours a day undermines one's health."

BRAZIL HARD ON DENTISTS.—Under date of Feb. 1, 1902, consul Kennedy writes from Para: "There is a federal statute in Brazil which provides that all physicians, surgeons, and dentists of foreign extraction who desire to practice their profession in any part of the country must first pass a prescribed examination at the medical colleges at Bahia and Rio Janeiro. These examinations, which include languages and other branches not usually found

in a medical curriculum, are said to be so severe that few foreigners have any chance of passing them successfully. It is now reported that this law is to be more rigidly enforced hereafter, especially in the case of dentists. There are several American dentists in Para who have been practicing here for years. They may now be required to go to Rio de Janeiro and take examinations, and in case of failure they will be compelled to give up their profession or leave the country. Although this is a very profitable field for medical practitioners, it should be remembered that the examinations are so severe as to necessitate two or three years extra preparation."

RIVALRY.—First oldest inhabitant—"I won't stand it. I'm older'n you, an' you know it. W'y look at my mouth. I ain't got a sound lower tooth



in my head." Second oldest ditto—"Look in yer mouth? He, he! W'y gum it, you had a dentist pull those teeth out an' he'll swear that you hain't paid him yet."—*Chicago News*.

EXAMINING BOARD AFFAIRS.—Two members of the Wisconsin State Board of Dental Examiners have resigned because the governor deposed without warning another member during the progress of an examination. The Missouri State Board of Dental Examiners met at Jefferson City May 19. Two out of seven applicants passed the examination and were registered. The next meeting will be held the first Tuesday in October. The governor of Ohio has appointed the following State Board of Dental Examiners, under the new law mentioned in last month's DIGEST: H. C. Brown, J. K. Douglas, L. L. Barber, H. Barnes, S. Smith. We announced last month that the dentists of South Dakota had attacked the constitutionality of the law requiring each practitioner to pay an annual registration fee of \$2, and on May 13 a judge in the circuit court declared this provision of the law unconstitutional. As the payment of the fee is necessary to sustain the expenses incurred by the requirements of the law, the whole law would seem to be affected.

SPEED OF WINK.—A German professor, by means of a photographic apparatus, has measured the amount of time consumed by the eyelid in the act of winking. His investigations proved that the eyelid descends more quickly than it rises, and that an appreciable pause takes place when the lid had descended. The measurements, obtained by a special photographic apparatus, are as follows: Downward movement from .075 to .091 of a second; the pause is from .15 to .17 of a second, while the rising of the lid takes about .17 of a second, the wink being completed in about .4 of a second. —*Jeweler's Review.*

MARK TWAIN ON BAD HABITS.—"Bad habits, according to Mark Twain, are very good and helpful things for a man to have," said a Philadelphia editor. "The first time I interviewed Mark I was smoking a cigaret, and I apologized for this. 'It's a bad habit, I know, sir,' I said humbly. 'Why, that's all right,' said Twain; 'I like to see young men have bad habits. I like to see them stir around and accumulate all of them they can. A man is like a balloon, and his bad habits are his ballast. Now, suppose he's taken suddenly down sick. He throws off some ballast—throws off, we'll say, the habit of smoking—and in a little while he's up and about again. But if he's very sick, and the throwing off of smoking doesn't bring him around, he gets rid of more ballast—gets rid, say, of the booze habit—and if even then he isn't cured he must throw off still more ballast; so that you can see easily enough what a fine thing it is for his health to have as many bad habits as possible. But if he has no bad habits and is taken sick, not being equipped with any ballast to throw off, the chances are that the unfortunate fellow will die.'"

ROBBERIES—May 12 three dentists at Santa Ana, Cal., lost respectively \$200, \$40 and \$20, all three jobs apparently having been done by the same thief. May 26 two offices at Trinidad, Col., were robbed of \$115 and \$35 respectively. June 2 two dentists at Colorado Springs lost \$10 and \$50 respectively. Robberies are reported from Las Vegas and Raton, N. M. A dentist in New Haven, Conn., lost \$60 some weeks ago, and recently two more offices in that town were entered by burglars, in one instance getting \$50 worth of material and in the other case being frightened off. A dentist at Louisville lost \$100 worth of stuff last month, and the thief was caught a few days later while trying to dispose of it. June 12 a dentist at Adrian, Mich., lost about \$75 through thievery, and the next day a dentist at Port Huron was victimized. The safe of two dentists at Fayetteville, N. C., was looted of \$50 in cash on May 28 by their office boy, who was arrested two days later. It is reported that last month several offices in Newcastle, Pa., were robbed by thieves. A dentist in Milwaukee was robbed last month, but the burglar was arrested while trying to dispose of the loot. A dentist in New York warns the profession to look out for a smooth young man who, passing as a patient recommended by some physician, asks to have his teeth examined, and then steals whatever he can while the dentist is called out of the office by a confederate. In view of these reports which the DIGEST has been publishing for several months, the profession throughout the country would do well to protect itself from similar depredations.

HUMAN MILK, A NEW REACTION.—Moro (*Wein. Klin. Woch.*, Jan. 30, 1903.)—When a few drops of human milk are added to fluid obtained from a hydrocele this latter fluid will coagulate to a firm mass in a few minutes. This does not happen if cow's milk is used. This reaction occurs with human milk even when heated and therefore must exclude the action by ferment. He was unable to determine the factors engaged in this peculiar phenomenon.

UNBREAKABLE GLASS.—The *Journal d'Hygiene* publishes a description of the unbreakable glass made by compressing ordinary devitrified glass, and its advantages for clinics, hospitals, etc. It makes the best material for floors, wall coverings, ceilings, etc., as it is not affected by the copious use of water and disinfectants nor by the most powerful acids, nor by freezing. It is used extensively at Reverdin's polyclinic at Geneva and in establishments where acids are employed in manufacturing. Recent tests at the French Laboratory of Bridges and Highways proved that a force of 2023 kilograms to the square centimeter was required to crush it, while granite can be crushed with 650 kilograms. Tests with a rapidly revolving grindstone showed that it resisted wear better than Saint Raphael porphyry and other extremely durable stones. It also surpassed other materials used in floors and pavements in its resistance to weights falling on it.

TO ENCOURAGE CHEERFULNESS.—The fame of the poem of Ella Wheeler Wilcox "Laugh and the World Laughs with you, Weep and you Weep Alone," has brought forth a parody by Dr. J. W. Chamberlain of St. Paul, published in a current number of the *Medical Mirror*:

Knock, and the world knocks with you;
 Boost and you boost alone;
 This bad old earth is a foe to mirth,
 And has a hammer as large as your own.
 Buy, and the gang will answer;
 "Sponge," and they stand and sneer;
 The revellers bound to a joyful sound,
 But shrink from refusing beer.
 Be rich, and men will seek you;
 Poor, and they turn and go.
 You're a mighty good fellow when you are mellow
 And your pockets are lined with "dough."
 Be "flush," and your friends are many:
 Go broke, and they "lose" you—all;
 You're a dead game sport at \$4 a quart,
 But woe if you chance to fall.
 Praise, and the cheers are many;
 "Beef," and the world goes by;
 Be smooth and slick and the gang will stick
 As close as a hungry fly.
 There is always a crowd to help you
 A copious draught to drain;
 When the jag is done you must bear alone
 The harrowing throbs of pain.

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